



Hospital Environmental Management Facilitating Healing Towards Service Quality of Chonburi, Rayong, and Buddhasothorn Hospitals in Eastern Economic Corridor (EEC) in 2020

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This research aimed to study 1) the hospital environmental management for healing facilitation; 2) the service quality provided by Chonburi, Rayong, and Buddhasothorn Hospitals in the Eastern Economic Corridor (EEC) in 2020; and, 3) the hospital environmental management facilitating healing towards service quality of Chonburi, Rayong, and Buddhasothorn Hospitals in the Eastern Economic Corridor (EEC) in 2020. The research populations were people who received services from Chonburi, Rayong, and Buddhasothorn Hospital in 2020. The amount was uncertain. The samples in this study were 400 of those who received services from these three hospitals, retrieved from a convenience sampling method. The data collection tool was the questionnaire. The statistics used for data analysis were frequency, percentage, average, and standard deviation, correlation coefficient and multiple regression analysis. It was found from the study results that the hospital environmental management for the healing facilitation overall presented at the highest level in which it could be ranked from most to least as follows: psychological environment, physical environment, social environment, and natural environment. The hospital service quality overall showed in the highest level in which it could be ranked from most to least as follows: hospital services on the aspect of procedural improvement, leadership, customer expectations, and meaningful data. Environmental management either on physical, natural, social or psychological environment was associated with the score of hospital service quality either on the aspects of customer expectations, leadership, procedural improvement, or meaningful data. Overall, they showed with high level of relationship in the same direction. The influential environmental factors on the hospital service quality overall were for

instance, psychological environment, physical environment, and social environment. All the three factors together were able to explain the service quality of the hospital at 80.4 percent.

Key words: *Environmental Management, Healing in Hospital, Service Quality, Eastern Economic Corridor (EEC)*

Introduction

Hospital environmental management in many countries has segregated the responsibilities between medical and management divisions. Naturally, based on their profession, doctors had not been trained to function on the organisation management related to accounting, financial, treasury, human resources, administration, parcels, and durable articles, as well as public relations. The larger the organisation, the more complication it would be for the organisation management. The large hospitals overseas consisted of the management division either in the part of Generalist and Specialist. This was another branch of career that required for academic teaching and learning. Only some doctors could do well on organisation management from self-learning and short training for sometimes. When it comes to responsible on large hospital environmental management, it becomes the burdens for them to responsible on things they are not specialised on.

Hospital environmental management referred to the management on natural environment, physical environment, and psychological environment that were appropriate for the patients care with the following key goals.

- Safety
- Learning
- Healing

Environmental management to facilitate for learning was to form the environment that would enhance the patients, relatives, and public or personnel to learn, understand, and be able to bring what they had experienced to use in daily life to enrich for their good health and reduce unnecessary illness. The issues required to consider were 1) the opportunity to form learning in each point; 2) the useful learning content; 3) the target group to gain benefit; and, 4) to fit with the needs of the stakeholders. (Huisman et al., 2012).

Quality management referred to the ongoing activities or procedures to stress on the quality and quality improvement in bringing the tasks from all parts of the activity thorough the cycles of all working process into the quality management system on every aspect of the organisation. This would improve the operation toward continual goal achievement and efficiency. There must be quality and efficiency in all activities by the top executive management who must foresee the significance and support those activities, where everyone can collaborate and join



responsibly. Quality improvement was everyone's responsibility where the main goal was toward customer satisfaction either internal or external. (Dickens, 1994).

Research Objectives

- (1) To study management facilitating healing in the hospital.
- (2) To study the service quality of Chonburi, Rayong and Buddhasothon Hospitals in the Eastern Special Economic System (EEC) in 2020.
- (3) To study management facilitating healing in hospitals influencing the quality of service of Chonburi, Rayong and Buddhasothon hospitals in the Eastern Economic Corridor (EEC) in 2020.

Research Scopes

- **Scope of content**

1. Environmental management to facilitate hospitalisation (X)
 - 1.1 Physical environment
 - 1.2 Natural environment
 - 1.3 Social environment
 - 1.4 The psychological environment
2. Quality of service of hospitals Chonburi, Rayong and Buddhasothon in the Eastern Economic Corridor (EEC) in 2020 (Y)
 - 2.1 Customer expectations
 - 2.2 Leadership
 - 2.3 Process improvements
 - 2.4 Handling of meaningful data

- **Area boundary Population and sample**

The population in the special economic corridors of 3 provinces: Rayong, Chachoengsao, Chonburi, 130 people, total of 390 people. For convenience, the researcher requested to collect 400 questionnaires.

- **Time boundary**

April 2020 - May 2021

Literature Review

- **Hospital Medical Administration:** The Ministry of Public Health plans to support the development of the Eastern Economic Corridor in the first three years (60-62), focusing on the development of the infrastructure, the Center of Excellence in Medicine and Public Health and the potential to provide excellent occupational medicine and environmental medicine services in line with the local industry context.

In addition, planning and integration of all relevant sectors, such as public hospitals, all affiliated with the private sector, industry and the public sector to develop the capacity of the hospital in the said industrial area. By raising the level of competence, hospitals can increase the number of beds, add an operating room, an intensive care unit Neonatal ICU Unit for fire and scald patients, develop quality standards. It can also add an accident room and emergency medical service system for disaster and disaster management planning covering air, land and sea transportation plans to accommodate explosions, leak of chemicals, radiation, oil, and the development of occupational medicine clinics in all community hospitals. Primary service systems promote health, prevent disease environmental health and prevention of other threats, including the production and training of personnel in occupational medicine and environmental medicine, such as resident physicians in occupational medicine and environmental medicine, and occupational health specific nurses, etc.

Moreover, the public and private sectors have jointly planned to support the medical industry (Medical Hub) and medical tourism (Medical Tourism) to build a high-tech hospital in the industrial zone. Or a new city set up specialised centers such as beauty dentistry, laboratories. Inviting well-known medical schools from abroad to establish in the area will support and direct the standards of the health care business, such as private hospitals, spa nursing homes, rehabilitation center and long-term health tourism (long stay for health) to pass international quality and standards.

Recently hospital management has become among one of the competitive services. Service was brought to use in organisational development related to administration for the advancement and to secure services. Human resources management was key to keep co-developing for the quality and efficiency of personnel, so that they would gain acceptance and credibility among the service receivers. The hospital launched 5S activity which was the key basic work quality improvement. Increasing quality led toward environmental improvement that enhanced the hospital atmosphere, staff operated under a safe and healthy

environment, wellbeing encouragement, support, good attitude and with a good awareness toward the operation (Yousapronpaiboon and William, 2013).

- **Environmental Management for Healing Facilitation:** To find out on what would be the characteristics of environmental management for healing facilitation, answers were sought. Since, the healing facilitation environment did not depend only on physical factors but, also the socio-cultural context. Psychological factors could also have significant influence on patients healing facilitation. Healing comes from the same root of the word ‘health’ and the word ‘Whole’. The word healing or remedy then referred to the holistic health management through the creation of harmony between body, mind, society, and spirituality. This was hence different from the word ‘Therapy’ from Greek language *θεραπεία* that shares the same meaning as cure, an attempt to form remediation for health problems via diagnosis. Therefore, healing reflected deeper dimension than therapy. A healing outcome is not dependent on fixing damaged parts, but also to balance the whole system in harmony. The apparent result was reduced stress and relief from anxiety among all the relevant people. (Laursen et al., 2014).
- **Changes in Physical Environment:** One of the trendy patient room design no matter modern design, or the old building improvement, was to design for the single room or, special room. There were several reasons for the hospital to adjust the special room and it was not only for foreseen benefits. The clear cut reason was to fully reduce infection between patients. At the same time, the proportional area was easier for cleaning, moreover, it was found from the study that staff washed their hands more often in the special room. (MacAllister et al., 2019).
- **Dimension of Change:** Among the key factors to drive toward environmental changes and healing facilitation improvement, one was the patient-centered concept in hospital management. With the new presentation guideline, patients must get good treatment and be honored as they should. The patient’s rights and privacy shall be respected. Besides, patients will perceive their status, symptoms of illness, treatment processes, and prediction of treatment results, laboratory reports as well as any treatment approaches in which will be clearly described to them. Thus, the patient and family were required to integrate their decisions at each step of treatment and any concerns will be brought to consider and implement. (Warunkul et al., 2008).

Adding more healing channels for patients provides treatment quality and it does not matter what the activities are, based on the belief in each religion, praying, concentration, massage, aromatherapy, warm touch, acupuncture, positive imagination, music playing and listening, observing and creating artworks. This also included with creative thinking for the other healing activities. In Thailand, there were many hospitals that began to practice this concept to and get the results. Another concept to adopt was to pay attention to the patients’ nutrition. Some used

to place the research question on what kind of food the patients said to be delicious compared to those dishes outside the hospital. The answer was boiled eggs, this may be a little funny answer but, actually if we considered about the dishes served to patient bed with plain and cool taste, not delicious, and not look well. Under their sick conditions, when received the dishes as said above what would be better than boiled egg. The emphasis on the patient nutrition will improve the quality of the patient treatment. Chinese medicine placed great importance on nutrition. It was said that the patient's enjoyment with each meal could be a good indicator for the patients' health recovery assessment. Would it be possible for the hospital to arrange the healthy menus for the patients to place order and serve to their room when they feel hungry apart from the regular meals? Delicious and well-cooked healthy menus made by order serving to patient bed seemed to be what the patients in public hospitals dream of under the health insurance project that did not guarantee for quality. Since at present, the patients were unable to avoid to have dinner before 17.00 p.m. because staff would collect back the food tray to wash before changing their shift. (Patterson et al., 2017).

- **Environmental Management for Remedies:**

- **Creating a Healing Environment:** One simple tip for creating a healing environment is to find ways to reduce environmental stress. Research reports on the relationship of mental, nervous and immune systems shows the emotional effects of stress. Stress affects the human body in many ways because of the human brain, nervous system, endocrine and immune system. Impact on one system inevitably affects the other systems involved. Therefore, in order to create an environment that is conducive to healing Therefore should have Consider to be all round as follows. (Douglas and Douglas, 2004).

Create a distraction point:

- Install art pictures, nature scenery, family photos, sacred objects, tree offerings in the patient's room.
- Find music, music or audio of chants. The audio teachings of religious leaders choose only the ones the patient likes to hear and listen and then relax to relax the patient.
- In the patient's room there is a CD or DVD player. It provides videos designed for healing to the patient, perhaps a slideshow of nature with music playing.
- Pets are also a great distraction. But in the hospital pets are not allowed in the ward. So, a pet photo or videos of pets loved by patients can be shown to the patient to watch.
- Provide a gardening area in the hospital closest to the patient's room. Allow the patient who is able to walk out of the room to the park as often as they want. In the case of a patient who is critically ill and unable to leave the

room, a small garden can be arranged on the balcony of the patient's room so that it can be seen from the patient's bed. This will have a positive effect on the treatment.

- In the event that the scenery outside the room is beautiful, the weather is good, opening the window will change the atmosphere for the patient (only if allowed to open windows).

- Look for other hospital activities such as exercise rooms, games rooms, children's activity rooms, libraries, living rooms, etc.

- **Eliminate What is Causing Stress in the Environment:**

- Enhance aromatherapy in the environment. To create a scent that is conducive to healing eliminate unpleasant odors that will create stress and anxiety for the patient. Learn more about aromatherapy. To select the scent suitable for the conditions the patient's health, such as lavender scent will make the patient sleep better, etc.

- Eliminate any source of noise that may cause stress in the patient.

- Check the amount of light and optimise the brightness of the light.

- **Cooperate with Staff:**

- Inquire about staff performance schedules so that the patient's relatives will be able to schedule visits on their own in accordance with the performance of the staff and will not miss any important events that should be shared.

- Provide instructions to the patient who must pay attention to the professionalism of the staff.

- Staff should be involved or knowledgeable in planning the treatment process and check the completeness of the steps as planned.

- **Look for Additional Treatment Options:**

- Some hospitals offer alternative therapies that support medical treatment such as reflexology, acupuncture, pain relief, music therapy, and aromatherapy.

- Provide additional means of healing in the hospital according to beliefs or from the advice of others, and consult with the treating doctor for approval before proceeding.

- **Choose the Right Nutrition:**

- Check the food options provided by the hospital including flexibility of meal times and food items.

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- Study the right nutritional value for the patient.
 - Find out the possibility for the patient to eat with others.
- **Keep the Atmosphere Warm with Love:**
 - Patients must take good care of their physical and mental health. There should be a stable, calm, warm, loving, generous and caring temperament, they should get enough rest, practice their own stress-relieving techniques, have a good mood, and smile as appropriate.
 - Be aware of the suitability, strength, endurance to the existence of one's physical fitness and the feeling of being in control of all these things can have a link to good health, which the patient can learn and practice.
 - Contemplate and pay sensitive attention to interactions with patients, including warders, visitors and staff. Must contribute to creating and keeping the atmosphere warm, loving and conducive to healing.
 - **Atmosphere Heals in the Workplace:** Environmental management that facilitates remedial action for the patient. Servant staff to provide warmth like home that can be perceived by the five senses of the person is the sight, smell, taste, hearing, perception / touch. It is the integration and balance between safety, learning, belief, culture, society, livelihood, landscape, architecture and self-sufficiency.
- Improving the environment for healing:
- Physical environment
 - Natural environment
 - Social environment
 - The psychological environment.
- **Physical Environment:**
 - Environmental Light: Providing adequate lighting in the area, and providing adequate amount of natural light to the ward/workplace.
 - Colour in The Environment: Study and choose the appropriate colour. It affects the mood and feelings of the people who use the building, it will strengthen the liveliness of the residents.
 - Environmental Landscape: landscaping, adjusting the landscape to look beautiful, with the beauty of natural plants, small and large, with rocks, ponds, streams, streams, waterfalls, as well as natural sunlight (Dijkstra et al., 2006).
 - **Natural Environment:** There is a design that can bring a natural atmosphere into the building, or in the building can look out and see. It is considered to be a remedy to the user of the building is Environmental Noise: Reduction of polluted noise. And

the addition of health-friendly sounds, such as the sound of water, wind, and the environment of the patient's daily life.

- Air Quality: Improve the air quality and increase the value of air quality with the scent of essential oils of various herbaceous plants that have great emotional healing properties called aromatherapy.

- **Social Environment:**

- It is an environment that is relevant to the well-being of people. In the field of social life including the customary and cultural behaviors that are practiced.
- Primary groups are families, relatives, and siblings that are important to a person's illness and health behaviour.
- Secondary groups include colleagues, professional groups and other social groups, which are important to support information and knowledge related to health.

- **Psychological Environment:**

- To bring the feeling memory needs experience the faith or belief of the patient, such as prayer or performing various rituals, etc., to provide an environment. To create good mental well-being in making happiness, satisfaction while coming to the service or stay in the hospital for treatment

Research Hypothesis

Hospital environmental management facilitating healing towards service quality of Chonburi, Rayong, and Buddhasothorn hospitals in Eastern Economic Corridor (EEC) in 2020 had the following hypotheses.

- (1) Hospital environmental management facilitating healing had the relationship with the service quality of Chonburi, Rayong, and Buddhasothorn hospitals.
- (2) Hospital environmental management facilitating healing had influenced on the service quality of Chonburi, Rayong, and Buddhasothorn hospitals.

Research Conceptual Framework

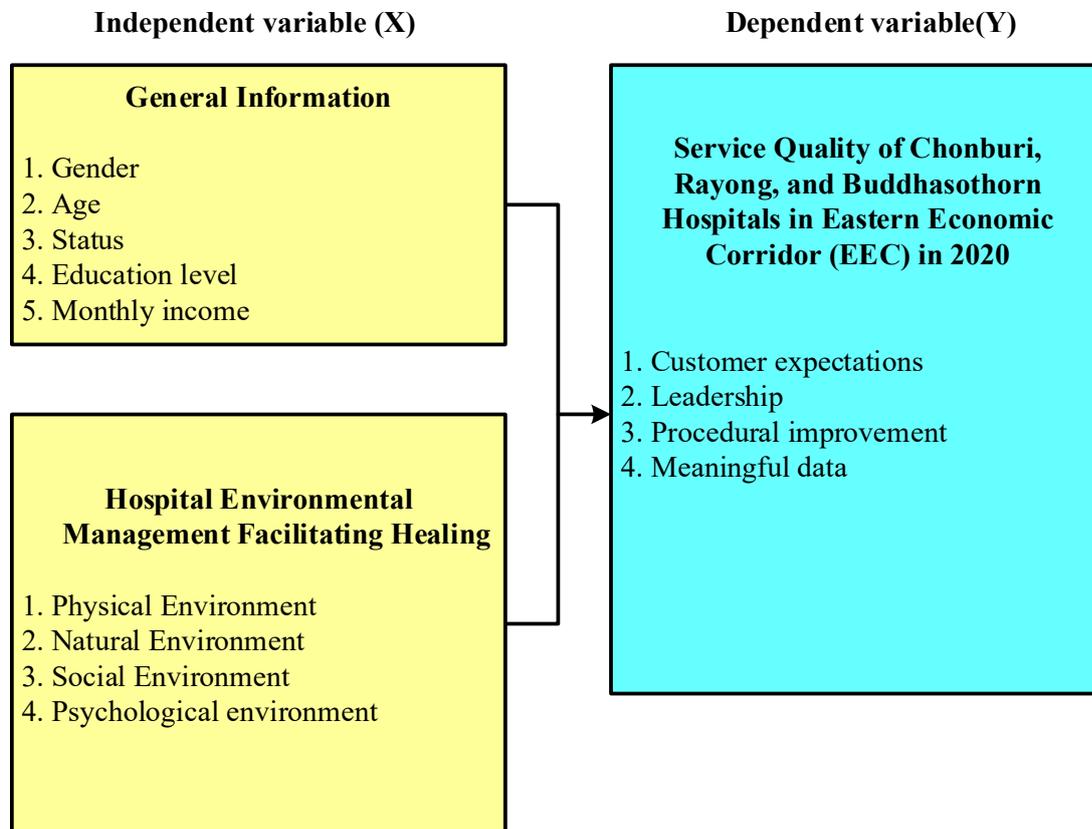


Figure 1: Quantitative research conceptual framework.

Research method

- **Quantitative Research:** Sample and Populations

Populations used in this study were the service receivers from Chonburi, Rayong, and Buddhasothorn Hospital in year 2020.

(1) The sample group in this study was the population who received services from Chonburi, Rayong, and Buddhasothorn hospitals in 2020. The number of people was not known and the sample size calculation was done at the confidence level of 95% (Wanichbancha, 2009).

For convenience reasons, the researcher used Convenience Sampling method to conduct data collection from 400 people who received services from Chonburi, Rayong, and Buddhasothorn Hospital.

• **Quantitative Data Analysis:**

- (1) Data analysis via descriptive statistics used frequency, average, and standard deviation values to analyse the demographic data of the populations and explain on the general characteristics of samples.
- (2) Data analysis via inference statistics used statistics such as correlation and multiple regression for hypotheses testing in the study of hospital environmental management facilitating healing towards service quality of Chonburi, Rayong, and Buddhasothorn Hospital in Eastern Economic Corridor (EEC) in 2020. For the open-ended questionnaire, the researcher performed content analysis to provide a descriptive summary on the issues that adopted theory and experiences for analysis.

Results and Discussion

Table 1: Overall hospital environmental management facilitating healing.

Environmental management	Average	Standard deviation	Level of management
Physical environment	4.28	0.69	highest
Natural environment	4.12	0.72	high
Social environment	4.20	0.70	high
Psychological environment	4.31	0.68	highest
Overall	4.23	0.62	highest

From Table 1, it was found that the overall hospital environmental management facilitating healing was at the highest level with the average score of 4.23. When considering each aspect, it was found that psychological environment had the highest level of management at the average score of 4.31, the physical environment also had the highest level of management at the average score of 4.28, the social environment with the high level of management at the average score of 4.20, and natural environment with the high level of management at the average score of 4.12.

Table 2: Overall hospital service quality.

Quality	Average	Standard deviation	Quality level
Customer expectations	4.34	0.72	highest
Leadership	4.36	0.72	highest
Process improvement	4.42	0.72	highest
Meaningful data	4.30	0.73	highest
Overall	4.36	0.67	highest

From Table 2, it was found that the overall hospital service quality was at the highest level with the average score of 4.36. When considering each aspect, it was found that the hospital service on the aspect of procedural improvement had the highest level of service quality with the average score of 4.42, second the aspect of leadership with the highest level of service quality at the average score of 4.36, the aspect of customer expectations had the highest level of service quality with the average score of 4.34, and the aspect of meaningful data had the highest level of service quality with the average score of 4.30.

• **Hypothesis 1**

The hospital environmental management facilitating healing was associated with the service quality of Chonburi, Rayong, and Buddhasothorn hospitals.

The study on the relationship between the hospital environmental management facilitating healing and the hospitals' service quality through the approach of multi-correlation coefficient presented the analysis results in table with description. The variables in the study were set as follows:

- X1 refers to the environmental management score on the aspect of physical environment.
- X2 refers to the environmental management score on the aspect of natural environment.
- X3 refers to the environmental management score on the aspect of social environment.
- X4 refers to the environmental management score on the aspect of psychological environment.
- Y1 refers to the hospital service quality on the aspect of customer expectations.
- Y2 refers to the hospital service quality on the aspect of leadership.
- Y3 refers to the hospital service quality on the aspect of procedural improvement.
- Y4 refers to the hospital service quality on the aspect of meaningful data.
- Y refers to the hospital service quality on the overall aspect.

Table 3: Research results on the relationship between the hospital environmental management facilitating healing and the hospitals' service quality of Chonburi, Rayong, and Buddhasothorn hospitals.

Variables	Y1	Y2	Y3	Y4	Y
X1	0.706	0.722	0.722	0.702	0.769
X2	0.661	0.667	0.648	0.669	0.713
X3	0.667	0.671	0.684	0.658	0.722
X4	0.842	0.814	0.762	0.746	0.853

According to Table 3, it was found that the environmental management on the aspect of physical environment, natural environment, social environment and psychological environment were related to the hospital service quality on the aspect of customer expectations,

leadership, procedural improvement, and meaningful data. Moreover, overall the relationship was in the same direction with the high relationship level.

- **Hypothesis 2**

Hospital environmental management facilitating healing had influenced on service quality of Chonburi, Rayong, and Buddhasothorn hospitals.

The study on the influences of hospital environmental management facilitating healing towards service quality of Chonburi, Rayong, and Buddhasothorn Hospital by the multiple regression analysis presented the results in form of table with the description as follows.

Table 4: Results of the study on the influence of the overall hospital environmental management facilitating healing towards service quality of Chonburi, Rayong, and Buddhasothorn hospitals.

Predicting variables	Coefficient regression (B)	Statistic (t)	p-value
Constant value	0.220	2.104	0.036
Physical environment (X1)	0.280	7.481	0.000*
Natural environment (X2)	0.038	1.066	0.287
Social environment (X3)	0.092	2.589	0.010*
Psychological environment (X4)	0.556	17.191	0.000*
Correlation coefficient (R) = 0.897		Statistic (F) = 405.783	
Decision coefficient (R ²) = 0.804		p-value = 0.000*	

Remark: significance level of 0.05

From table 4, it was found that the factors of environmental management that influenced the overall hospital service quality were the psychological environment, physical environment, and social environment where psychological environment had the highest influence (B = 0.556, t = 17.191, p-value = 0.000), second by physical environment (B = 0.280, t = 7.481, p-value = 0.000), and social environment (B = 0.092, t = 2.589, p-value = 0.010). All the three variables were appropriated to use in predicting the hospital service quality (F = 405.783, p-value = 0.000). Three factors together could explain the overall hospital service quality at 80.4 (R² = 0.804).

Discussion of Hypotheses Testing Results

According to the study results, it was found that environmental management had a highly positive relationship with the hospital service quality. The factors of environmental management that influenced the hospital service quality overall were psychological environment, physical environment, and social environment, respectively. It was shown from the result of the study that patient psychology was the most important thing. If the patient had

good mental support with hope to recover from the disease and collaborate for good self-care and treatment, the treatment would be smoothly run.

The hospital then needed to consider the environmental management by mainly stressing the psychological environment then, physical environment, and social environment. The study results had conformed to the research by Kosol Juengsatiensap who stated that hospital environmental management facilitating healing for patients, service receivers, and staff must be warm and homely where people could enjoy the smell, taste, listening, perceived/touch and integrated to form the balance between safety, learning, belief, culture, social well-being, landscape and self-sufficiency. The study result confirmed to Warunkul et al. (2018) in their research and study project on “OPD building design for the Sripat Center, Faculty of Medicine, Chiang Mai University.” The study result found that the environmental factors affecting the satisfaction toward the design of OPD building in 6 aspects of working environment, safety environment, environmental management facilitating healing, private environment, beautiful environment, and convenience environment.

Besides, the results from the study also conformed to Kazemi et al. (2013) who studied on the hospital service quality via Gap analysis and from the satisfaction of service receivers (Sumalee, 2020; Zeithaml et al, 1990). It was found that service quality on the dimension of reliability had the heaviest composition weight at 0.92. This was seconded by the responsiveness dimension, assurance dimension, empathy dimension, and tangible dimension with the weight of composition at 0.88, 0.87, 0.84, and 0.80, respectively.

Recommendations

According to the study results, the researcher made the following recommendations.

Recommendations for the Environmental Management Facilitating Healing in Hospitals:

- (1) It was recommended to add diversity into the central recreation area for patients, relatives, and hospital staff to relax. In case there was a limited area for central recreation, the hospital may consider adjusting their central recreation area to be more diverse.
- (2) It was recommended to increase the air quality by essential oils because the aroma from essential oils helped people to feel relaxed, clear, and be more comfortable.
- (3) It was recommended to increase the environmental arrangements related to peoples' well-being in customary field, such as having the prayer room for Muslim patients, relatives, personnel, or Buddha statues for the Buddhists to pay respect and worship, etc.
- (4) It was recommended to pay attention to the patients' beliefs such as praying or rituals, and setting the environment to serve their psychological health, sharing the patients'

information with relatives and those close to them on their preference for the most relaxing environment for the patient.

Recommendations for Hospital Service Quality Increasing:

- (1) Devising survey questions to assess the satisfaction or hospital service quality. The appropriate questions should be measured on service quality. Moreover, provide the area for people to show their opinion or make suggestions for service improvements.
- (2) The hospital management shall randomly check on service quality in all aspects.
- (3) In service quality development, there shall be a monitoring system to assess each process to reflect the service quality to the relevant units and to correct, improve, and develop the quality of service.
- (4) There shall be an online satisfaction assessment survey and arrangement for group conversations consisting of the representatives from all work units and service receivers to find out the solutions to problems and mutually improve service quality.
- (5) The hospital environmental improvement for healing facilitation shall prioritise attention on psychological environmental improvement then, the physical, and social improvement, respectively.

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