ABSTRACT

Heart disease is the number one killer in Malaysia and alarmingly, the numbers of the patients are increasing throughout the year. Currently, the rehabilitation therapy for the cardiac patients are mostly using the equipment found in the rehabilitation unit, rather than utilising the green outdoor environments (GOEs) which can be found within the hospitals’ compounds. There is still a lack of study using GOE for cardiac patients’ rehabilitation therapy. The main purpose of this study is to identify the effectiveness of using indoor and outdoor as the settings for the rehabilitation therapy for the cardiac patients. This study was carried out at The Rehabilitation Department of Serdang General Hospital in Malaysia where rehabilitation treatments especially for cardiac patients were carried out twice weekly. The patients suffered the Coronary Artery Disease were selected for this study. The patients were exposed to both indoor and outdoor settings during the treatments. The patients’ heart rate and blood pressure will be the indicators for the effectiveness of the treatment received. A survey using questionnaires will also applied in order to identify the preferences of the patients on the types of elements that they would like to have within the indoor or the green outdoor environment. The results from this on-going study may help to identify the preferences for the setting of the patients undergoing the rehabilitation therapy at hospitals and also, providing the recommendations for the design of green outdoor environment as a rehabilitation area.

Keywords: healing garden, hospital garden, therapeutic landscape

1. INTRODUCTION

Cardiovascular disease has remained the number 1 killer in Malaysia for 27 years [1]. Rehabilitation refers to health care services that help a person keep, restore or improve skills and functioning for daily living and skills related to communication that have been lost or impaired because a person was sick, injured or disabled [2].

A large body of research is consistent with the proposition that humans are hard-wired to appreciate and benefit from exposure to nature [3]. Natural environments are often hypothesised to be restorative [4] which refers to the “process of renewing, recovering, or re-establishing physical, psychological, and social resources or capabilities diminished in ongoing efforts to meet adaptive needs” [4]. Therefore, staying within an outdoor environments or nature give a lot of positive impacts to the society and especially those who are recovering from sickness. Restorative Green Outdoor Environments (GOEs) for the sick has been part of healing since medieval times [5]. The designers and especially landscape architects attempt to design outdoor hospital environments so that they take into consideration the fact that one heals more quickly in a supportive atmosphere, one that ameliorates stress and provides opportunities for positive escape from clinical settings [6].

Currently, the rehab therapy for the cardiac patients are using the indoor the equipment provided in the rehabilitation department and less usage of the green outdoor environment (GOE) provided within the hospital. Furthermore, there is still a lack of study regarding the using of GOE during rehabilitation treatment for cardiac patients.

This paper is discussing the physiological response of cardiac patients while they are having their rehabilitation treatment. Instead of assessing through
2.2 Group of Patients

There are a few classifications of the patient’s group that was determined by the medical staff according to the risk of the cardiac patients.

<table>
<thead>
<tr>
<th>Red Group</th>
<th>The patients reach at high precaution stage and need high concern by the therapists/doctors along the treatment receive. Their heart might be having problem in pumping the blood to the heart, the thickness of the blood and etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(High Risk)</td>
<td></td>
</tr>
<tr>
<td>Green Group</td>
<td>The patients can consider as normal among themselves. However, they still need to be concern in order to prevent them from being in Red Group patients.</td>
</tr>
<tr>
<td>(Low Risk)</td>
<td></td>
</tr>
</tbody>
</table>

Table 1: The classification of cardiac patients according to their heart’s condition

3. EXPECTED RESULTS

The study is expecting to identify the effective rehabilitation treatment of the cardiac patients, both for the indoor and the outdoor. The results from this study are also aiming to provide the recommendations on the design of the GOE meant for the use in rehabilitation therapy for cardiac patients at hospitals in Malaysia.

4. CONCLUSIONS

Cardiac patients are one of the patient that faced haemodynamic changes in their life. Therefore, through an appropriate and effective education and treatment, they may gain back their confidence level. Furthermore, through the treatment also the patients might be helped in adapting themselves to be in their social life as normal as before. This study will be done to provide the suitable Green Outdoor Environment within the hospital especially for
the cardiac patients that undergo inpatient rehabilitation. Through this study, rehabilitation department may also develop an awareness program for the public about heart disease. Other than that, the government may improvise the technology equipment into more environmental friendly that could substitute the current used machine. The preferences of the patients also important to be known either they are comfortable on the settings of outdoor and indoor during the rehabilitation treatment receive. This may help the landscape architect to design more comfortable garden or courtyard for the patients on having their treatment.

5. ACKNOWLEDGEMENTS

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6. REFERENCES

Reference to a chapter in an edited book.