The Impact of Bimaristans Design on Design Factors of Therapeutic Buildings An Environmental Field Study in Makkah, Saudi Arabia

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Abstract:

"Paradise Garden" is a concept used in Bimaristans "Islamic historical therapeutic buildings" which has given rise to the application of several spiritual and aesthetic meanings that helped to raise the efficiency of the therapeutic environment. The hypothesis revolves around the idea that the technological development increases the interest in the functional side rather than the aesthetic side in the current therapeutic buildings. This had a negative impact on the efficiency of the functional environment which exceeded to the satisfaction and comfort of the buildings' users. This hypothesis has been tested through two types of studies: The first study was an 'Analytical Study' (of 4 hospitals) analyzing the horizontal projections to measure the effects of the natural lighting and ventilation. In the second study, questionnaires were distributed to both patients and staff in the therapeutic buildings to measure the therapeutic environment efficiency and the extent of satisfaction among of the buildings' users. It was concluded that the natural lighting and ventilation drive up healing (treatment) rate in the therapeutic environment. This concluded that the technological advances in the medical field helped to raise the level of functional performance and thus replaced a large part of the role of the natural lighting and ventilation.

Keywords:

Therapeutic buildings
Paradise Principle
Bimaristan

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1. Introduction

The Islamic civilization focuses on the morality and faith of the individual. At the same time, it is interested in the individual's physical wellbeing. That is why Muslims pays good attention to health care and hence built hospitals (i.e. Bimaristan) which were provided with multiple services to meet the needs of patients. Hospital services were provided for everyone regardless of gender, social status or physical ability. This is because Islamic civilization encourages the individual to become interactive entity with others; in both physical and social aspects. The development of therapeutic buildings continued to grow until it reached its peak in the Abbasid period (1029 – 1519), when it showed manifestation of challenge and beauty.

During the era of developing medicine and science as well as keeping in line with other nations, another aspects of the therapeutic buildings have developed. The buildings were developed aesthetically and spiritually which contributed to the creation of therapeutic healthy environments that affect the body, spirit and mind of a person to elevate him and help him respond to treatment. These new aspects were interested in simulating the Gardens of Paradise and the application of aesthetic sense inside the buildings for the purpose of having the sensory and moral pleasures.

With the passage of time and the evolution of technology, the emphasis on the importance of the aesthetic meanings decreased. This reduced the focus on the therapeutic aspects inside the buildings. This negatively reduced the means that help in the enjoyment of patients inside the building. There was a new approach that concentrated on the physical treatment and neglected the treatment of spirit and mind. As a result, the current therapeutic buildings lack the spiritual aspects which embody the spiritual values derived from Islamic style.

2. The Historical Background

2.1 History of therapeutic Buildings

Muslims became interested in the therapeutic buildings (known as Bimaristan), in the Islamic era. Muslims developed Bimaristans and provided them with the necessary equipmentand the aesthetic atmosphere which was considered a characteristic of Islamic architecture.

The word "Bimaristan" in dictionaries and history books was defined as a "Persian compound noun consisting of two words (Pemmar) and "stan" where the former means " patient" and the latter means" place." The Muslims used this term to refer to all

therapeutic buildings, then it became shortened in use as (Marstan) as mentioned by Al-Jawhari on Al Sahah "(Isa, Ahmed, history of the Bimaristan in Islam).

The Bimaristans were considered one of the architectural structures such as mosques, hospices, domes and schools which were built and developed by Muslims 'endowments. These Bimaristans enhance more medical and scientific development in the Islamic community. Taqi al-Din Maqrizi said: "The first Bimaristan in Islam was established by Al-Walid bin Abdul Malik, the Umayyad caliph, in the year 88 AH / 706 AD. Doctors were allocated to work there in consideration of remunerations and the leprosy patients were allowed to live there until they receive full treatment. The leprosy patients and the blind people were provided with special livelihood. Al Walid bin Abdul Malik was one of the best Kaliphs of the Umayyad period for his great community work such as building mosques and provided the leprosy patients with livelihoods. He dedicated an assistant for each crippled and a guide for each blind "(Isa, Ahmed, history of the Bimaristan in Islam).

2.2. The Paradise Principle

The spiritual and aesthetic vision of the typical environment was represented in the description of the Gardens of Paradise in the holy Quran, hence, the Paradise principle is based on the simulation of paradise as described in the Quran. This principle is based on the interaction of the Muslim architect with the environment to fulfill the human life values in a manner that suits the lifestyle of a Muslim and follows the Islamic legislation. This principle is also called the principle of environmental contrast, where the architect focuses on the role of parks and gardens in a desert environment with a harsh climate. The garden designing in the early Islamic eras was simple, but with the development of environmental and social life, Muslims became increasingly interested in gardens. Yet, to maintain their privacy, they surround gardens with high walls and palm trees. The Islamic design was dominated by geometric shapes like squares and rectangular units or other geometric patterns. The Muslim architect also cared for the presence of water in all parts of the park.

Trees and plants are among the elements of the Islamic Garden which were inspired by the Quranic description of the Gardens of Delight " Allah, Exalted is He, says ". And the shades of the 'Garden' will come low over them, and the bunches' of fruits', there, will hang low in humility" (Holly Quran- sorat Al-Insan, 10). So trees were used to complete the visual enjoyment in Islamic gardens, help to maintain privacy of the houses, provide various types of fruits, provide shades for open spaces and by passers, prevent sunlight reflection on the facades of buildings and reduce the severity of dazzling. For all the above mentioned, the Bimaristan, gardens are essentials source comfort, sensual and spiritual pleasure.

3.The Research Methodology and Discussion

To reach the findings, the researchers have relied on two types of field studies. The first study was to monitor the current state of the existing therapeutic buildings in the study area. The researcher selected a random sample of four therapeutic buildings in different areas within the study spatial boundaries. They studied the extent to which the paradise principle was applied as to the design and construction of the buildings. In the second study, questionnaires were distributed to a random sample of the 125 therapeutic buildings' users(including patients and staff members) with the purpose of measuring the psychological effect of the building in its current state on the users.

3.1 An Analytical Study of Existing Buildings

Four buildings, A, B, C and D, were selected from Makkah city in the Kingdom of Saudi Arabia (KSA). One of these buildings is still under construction (but is about to finish), therefore, the researchers relied on the approved plans and drawings of the building in addition to the design of the façade and view. The other three buildings were evaluated through field visits and through reviewing the available plans.

3.1.1 Methodology

The elements which were analyzed were divided into three different parts. Each element existed in each part inside the building. The first part relates to the extent of the reflection of the Islamic heritage and architecture on the building. This was verified by analyzing the use of the natural materials such as wood, ceramics and the other elements which have good effects on the patients, and the use of the earth colors, Islamic inscription, huge dome and stalactites.

The second part relates to role of the building in the treatment process. This was verified through the study of the extent of the provision of adequate quantity of natural lighting, the use of modern building technologies, and the availability of natural ventilation in the Interior Spaces.

The third and final part is on the study of the responsiveness to the principles of the Bimaristan. This was verified by means of studying the following: whether the special educational sessions were held and attended by patients, like the science sessions in the Bimaristan; the mosque location as to the building; the provision of internal gardens;

the provision of interior and exterior water areas; the extent of the provision of external gardens and the observance of privacy and ensuring the availability of a pharmacy and building in the therapeutic building.

3.2.1 Discussion

First: the reflection of the heritage of Islamic architecture and art on the building:

With regard to building (A), the building tells about the heritage of Islamic architecture where the designers avoided the use of any kind of gleaming glass fiber, so that the building reflects the prestige of science and advancement of medicine. These materials were replaced with other natural materials such as wood, marble and other elements which have a positive impact on the patients". Also, the center reflects the history of the region by using Islamic inscriptions and the quiet colors. The Quranic verses were also inscribed on the walls of corridors and patients' rooms. In addition, arches and geometric shapes were inscribed on the corridors walls to reflect the Islamic identity. Through the design of the center there has been a focus on Islamic spirituality and its role in the healing process through the use of the huge dome and stalactites. As an application of the standards of Islamic architecture, the building has been divided in its upper floors into two towers (where the south tower was made two floors higher than the north tower) to create shadows and prevent hot airflow from access to the garden. The garden connects the two towers on the roof of the ground floor (Fig.1.).

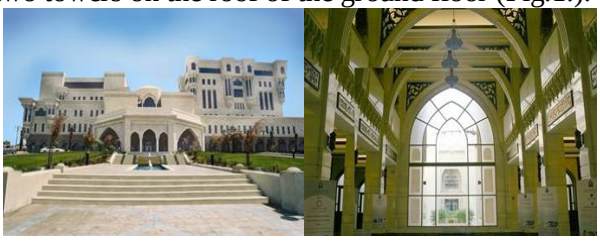

Fig.1. Reflection of the Islamic heritage on abuilding.

As for Building (B), the designer tried to express his influence of the Islamic design through using the wooden oriels in the window openings. In this attempt the designer only save an aesthetic (not functional) form. With respect to Building (C) and (D), Islamic architecture is not reflected in their designs.

Second: The extent to which the Building enhances the 'Curative Process':

The design of Building (A) helps expose patients to an abundance of light through the openings overlooking the internal gardens. This helps to support patients' feeling of serenity, thus promoting the recovery process. The design also uses the double height of ceiling in the foyer in order to make the patients and visitors feel welcomed and hence diminish the fear and tension among patients when visiting the hospital.

In Building (B), the presence of patients' inspection and control rooms in the east, 2nd floor of the same building, meaning that they are not exposed to any natural light or ventilation. Considering that ground, 1st and 2nd floors are vanished from the eastern and southern frontages as a result of the site topography (Fig.2).There is a number of staff offices locate at the eastern side of the first floor, which also means that they are not exposed to any amount of natural ventilation and light. On the other hand, the radiology rooms are installed in the west side of the same building.

Fig.2. Floor plan of Building (B)

Building (C), it is designed in a way that the foyer is built at full three floors height along with its glass facade' skylight' to allow the maximum amount of the natural light into the building. As for Building (D), it is divided into three sections connected by corridors that have large windows to allow introduction of the natural light. In addition, all the rooms in this building overlook the natural landscape.

Third: The extent to which the Buildings were affected by the Principles of Bimaristan Building:

In Building (A), the considerable influence of the Bimaristan building's principles is apparent, so the designer planned the mosque in the heart of the building and kept it open. Building A has a center for patient's teaching and education in the heart of the building. A number of gardens around the building were also allocated. One of the internal gardens was positioned in the middle of the mosque roof and that contained two octagonal fountains around which the green plants were spread out. It also has a circular path to help patients to walk in the open air (Fig.3).In addition to that a garden nearby the building was also established.

Fig.3. Islamic heritage reflection on building (A).

Table 1. The achieved parts for each building

Parts	Building (A)	Building (B)	Building (C)	Building (D)
1. Islamic heritage and architecture	1. Natural materials 2. Using Islamic inscriptions and the quiet colors. 3. Huge dome and stalactites	1. Use oriels in the window openings as an aesthetic for.	No reflect	No reflect
2. Role of the building in the treatment process	1. Expose the patients to an abundance of light 2. Double Height of the ceiling	1.Some users are not exposed to any natural light	1. Foyer is built at height of full three floors along. 2. Providing a skylight 3. Glass facade to allow natural light. 4. Skylight openings in the depth of the building 5. Places that are not exposed to the natural light are used to serve the functions of non-patient	1. Large windows to allow introducing the natural light. 2. Allow introducing the indirect natural light to gymnasium 3. The skylight is used in the foyer.
3. Responsiveness to the principles of the Bimaristan	1. The mosque in the heart of the building 2. Center for patient teaching and education 3. Number of gardens around the building are designed 4. Use the fountains 5.A garden nearby the building is established	1. Provide privacy. 2. Establish a public garden within the building	1. Provide privacy	1.. Number of gardens within the building 2. Provide privacy 3. Provide fountains

In Building (B) and (C), the privacy has been achieved only through separating the lounges and waiting rooms. In Building (D), the interior gardens were used, as each hospitalization section contains a garden in the heart of the building, to which the physical and occupational therapy rooms were facing(Fig.4). The privacy is maintained by separating the hospitalization sections into a male and female parts. The fountains were installed in the building foyer (Fig.4.).

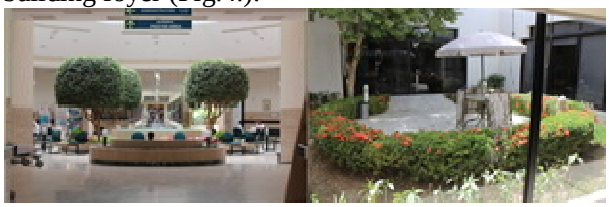

Fig.4. Entrance and interior Fountain gardens

3.1.3. The Findings:

- The influence of the Islamic architecture is reflected in Building (A) subject matter of the study.
- In three out of four buildings subject matter of the study, reflects the awareness of natural light in the treatment areas(Fig.5).
- In three out of four buildings subject matter of the study, reflects the focus on the main foyer and gives it a special importance in the designing aspect along with providing an abundance of natural light.
- In three out of four buildings subject matter of the study, internal or external gardens or both of them are provided as an awareness of its influence on the patients and curative environment.
- Most of metal hospital building principles are not represented in the buildings subject matter of the study. Saving the privacy element is the only element achieved in the four buildings.
- Building (A), achieved the most Bimaristan building

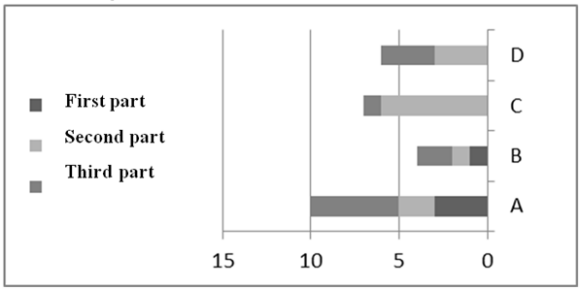

Fig.5. Achieved parts for each building.

3.2. Staff and Patients' Questionnaires:

3.2.1 Methodology:

- The questionnaire was distributed to a sample of 125 people who use the remedial building.
- The sample is selected randomly from three remedial buildings in Mecca, KSA. Two building were subjected to the field study, as explained earlier in Clause (3.1) of this research, vs. Buildings (C) and (D).
- The selected sample varied among the patients, caregivers, physicians and nurses.
- The questionnaire is closed (Yes and No answers).
- The questionnaire includes 4 categories; each of them includes a set of questions, *the first category* measures the achievement and inclusiveness of

Services provided in the healthcare building and it

consists of 4 grades. *The second category* measures the extent of the reflection of the Islamic architecture heritage and art on the building and consists of 3 questions. *The third category* measures the promotion of the curative process through direct contact with nature and consists of 4 questions. As for the *fourth category*, it measures the overall rating of the building from the participant's prospectus in the study and consists of 6 questions.

- All people were polled through written questions delivered to them by the researchers working on the study. There were no specific time limit to answer the questionnaires. These questionnaires were collected immediately after completion.
- To reach the results, we calculated the percentages for each question and examined its relation to other parts of the data.

3.2.2. Discussion:

With regard to the first category outlined in Fig.6.and Table 2.When enquired about the service provided for patients during the daily hours and its inclusiveness for morning and evening times, most of people stated that services were only provided during the morning hours but not the evening hours. This explained for the 75% service during this time, precluding the building development and driving to a malfunction in the continuation of visitors. Moreover, 50% of the people who participated in the study confirmed that the building is not suitable for the visitors with mobility impairment. In view of the fact that the building acts as a medical healthcare setting, it should be compatible with the needs for both healthy and disabled population to better serve the community. In the light of this some changes might need to be implemented, such as lowering the high steps and make the water supply handy for everyone including disabled users. . Of people participating in the study,60% confirms the lack of facilities to isolate patients with infectious diseases.

Comparing the hospitalization buildings in the ancient Islamic eras and the current hospitalization buildings, there are some advantages among the latter. Examples of such advantages are the availability of full-time physicians who work in shift to cover daytime hours, as well as the evening hours. Moreover, now a days hospital services are very oriented towards the need of the disabled and handicapped individuals. Examples of such awareness is seen in providing assistants for patients with disabilities(including patients with mental illness/disabilities)

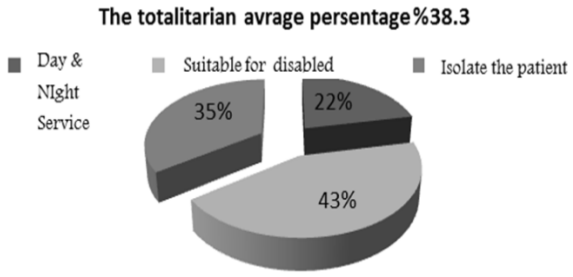

Fig.6.Thetotalitarian averagepercentages

Table 2. The totalitarian percentage

Phrase	'Yes' percentage
1.Day and night service	25%
2.Suitability for disabled	50%
3.Isolation for the patients	40%

As for the second category shown in the chart (Fig.7)and Table 3,the building does not reflect the Islamic identity, as it was chosen for its closed design, instead the building preferred the outwards openings towards the outside world instead of the inner side opening, leading to the absence of building's inner courtyard as confirmed by 68 % of people. This raised the necessity to go for industrial alternative measures like increasing the electrical lights and ventilation in the spaces. However, and in spite of its usefulness, these measures created an atmosphere of weariness, monotony and tension for the users of the building which added to their feeling of inadequate areas.

The points discussed earlier were supported by 68 % of the people, who denied the presence of some elements like water bodies inside and in the surrounding, thus missing one of the most important elements of the spiritual and aesthetic values e characterizing the Islamic architecture.. This is because the presence of water and green zone were considered as important aesthetic elements of the building, by which the building achieved both aesthetic and spiritual delectation along with its functional purpose. The building decoration is confirmed by 80% of those who were polled. The building is free of the landscape as confirmed by 48% of those who agreed that the building attends to the functional element but neglects the spiritual and aesthetic values inside the building.

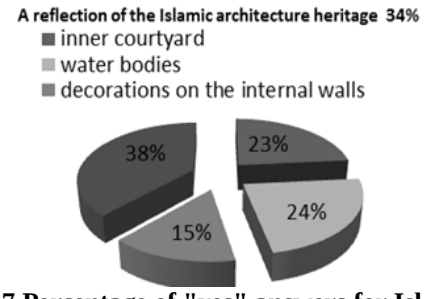

Fig.7.Percentage of "yes" answers for Islamic architecture heritage

Table 3. The "yes" answers for Islamic architecture heritage

Phrase	yes percentage
Inner courtyard	32%
Water bodies	32%
Decorations on the internal walls	20%
Landscape inside or outside the building	52%

As shown in the diagram (Fig.8) and Table 4, 46.9% of participants selected the "yes" answer concerning availability of adequate natural light inside the building. This was due to the different functions of the spaces that the participants occupied during their stay in the hospital while participating in the study. For example, at one of the buildings where questionnaires were distributed, diagnosis rooms included windows while waiting rooms did not. 78.1% of the answers agreed that there were many spaces that depend on artificial lightingto a large extent; which gives a sense of isolation and closure.

In general, when asking whether healthcare buildings in the city need to increase the area of their windows, 93.8% of the sample answered "yes"; which indicates the stereotype that most of the participants have in their minds concerning isolating the external environment from the internal environment in healthcare buildings in the study area which in turn hamper or delay the treatment process.

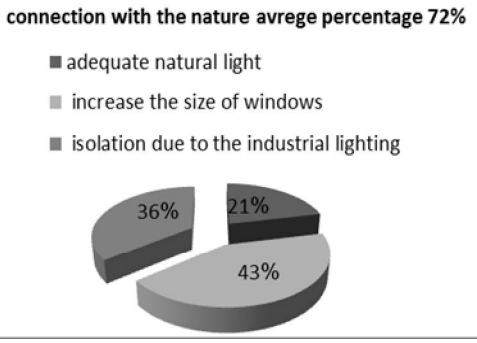

Fig.8.Percentage of the yes" answers for connection with nature

Table 4. The "yes" answers for connection with nature

Phrase	'Yes' percentage
Adequate natural light	46.90%
Increase the size of windows	93.80%
Isolation due to the industrial lighting	78.10%

Finally, we have the fourth category, which is concerned with studying the participants overall evaluation of the building.

According to the first question, the area of the building was rated as 'good' by 92% of the sample.

The overall shape of the building was also considered 'good' for 70% of the sample but when limiting the question to the external facades, 91% of the participants selected the answer 'bad'. As for the interior design of the hospital, most of the answers (70%) were 'bad'. Similarly, 75 % of the sample selected the answer 'bad' when questioned about the quality of the internal ventilation.

About 95% of the sample rated the overall environment in the healthcare building as 'good'. When participants were asked about their opinion regarding furniture, the majority (67%) of the sample rated as 'bad'. When comparing this percentage with the percentages in the answers concerning the interior design quality, the accordance between the two percentages proves largely; which illustrates that the interior of healthcare buildings in the study area in general does not provide adequate comfort for users.

As for the question about lighting in general, 62% of the sample recognized it as having good quality and 88% of the sample recognized the quality of artificial lighting while 90% of the sample answered 'bad' concerning the quality of natural lighting. In the second question of the same paragraph, 67% of sample rated the building as generally good. When calculating the average percentage of the 'good' answers in the first question the same paragraph, the result was 51.4%. There is a natural difference between the two percentages as the first question considers the building's details while the second question considers the general view of the users, but the a proximity between the two percentages and average level of both of them somewhat shows the building quality level and its fulfillment of users' services. We can relatively reach the kinks by referring to the first question in the same paragraph. (Fig.9).

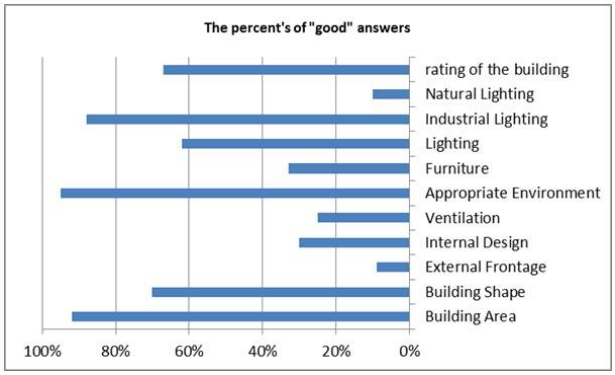

Fig.9. Percentageof "good" answers in the fourth category

The third question talks about the importance of spaces as a core facility in therapeutic buildings. The average of the percentage of users' satisfaction in each of the spaces are illustrated in

(Table .5). This includes the six spaces that have been selected to conduct the study and the percentages of "yes" answers concerning all satisfaction measures that were added to the study (including comfort, area, site in relation to the building and capacity).Fig.10shows the level of satisfaction in each of the six spaces and the degree of satisfaction of participants in the study concerning each space. According to the results of the study, examination rooms and doctors' rooms were the most comfortable among the six spaces included in the study. The average satisfaction rate for each of the four measures in the six spaces was calculated (in percentages) and compared to each other (Fig.11).

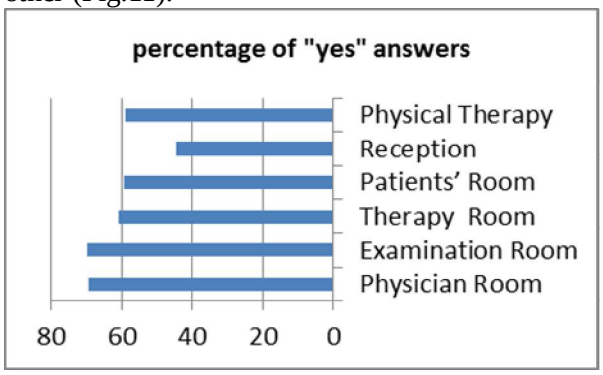

Fig.10. Thelevel of satisfaction in the six spaces

Table 5. The percentage of "yes" answers for all satisfaction measures

Space	Appropriate and comfort-table	The spaces to serve patients	Location in the building	The place capacity
Physician's room	**73%**	**67%**	**75%**	**63%**
Examination's room	**85%**	**64%**	**65%**	**65%**
Therapy Room	**56%**	**64%**	**56%**	**67%**
Patients' room	**37%**	**35%**	**88%**	**77%**
Reception	**25%**	**33%**	**85%**	**34%**
Physical therapy	**67%**	**65%**	**77%**	**27%**

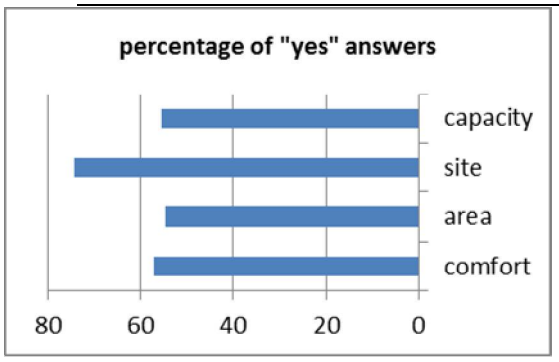

Fig.10.The percentages for the four measuresaverage satisfaction

In the fourth question, 67% of the participants answered that all building's areas serve their functions well. When calculating the average of the total percentages of all "yes" answers in the previous question (that showed the extent of users' satisfaction for some spaces) the percentage was 60.41%, which is close to the percentage of the answer to the fourth question that tracks overall satisfaction directly.

3.2.3 The Findings:

- According to the results of the current study, universality was realized in its same sense that was applied in Bimaristans by 38.3% in the current therapeutic buildings in the study area.
- The heritage of Islamic architecture is reflected and its impact manifests on the buildings according to 34% of participants in the current study.-72% of participants think that, the Buildings are adjacent to nature.-Healthcare buildings in the study area have a good quality standard as per 61.5% of participants.
- By comparing the average of total percentages of reflection of Islamic architecture on contemporary buildings in the second category (which is equal to 34%) with the average of total satisfaction percentages for building's shape, its external facades, its interior design and its furniture, (which is equal to 35.5%) we find that the two percentages are almost equal and this indicates the presence of a relationship between users satisfaction and the reflection of Islamic heritage in buildings.

3. Results

- According to our findings, 25% of the sample contained in the first study (i.e. one building) reflected the impact of Islamic architecture. On the other hand, the second study showed that 34% of study participants believe that there is a reflection of Islamic heritage on contemporary therapeutic buildings.
- The designs of 75% of the buildings that underwent the first field study, specifically 3 building, reflected full awareness of the importance of adjacency to nature in therapeutic spaces. According to the second study, the buildings are adjacent to nature by 72%. Yet, it has been evidenced that it is possible to create an atmosphere that enhances treatment process even without previous background about the principles of

Bimaristans building and without getting influenced by Islamic architecture and heritage.

- Extreme impact of Bimaristans building manifested only in one of the four buildings that underwent the first study by 25%. In the second study, one of the principles of building Bimaristans was the totalitarian which was realized by 38.3%. When comparing the two percentages with comfort percentage in all spaces (57%) and the percentage of users' satisfaction with the spaces in general(60.40%), we noted that satisfaction and comfort percentage is average with lack of realization of the principle.
- By comparing the three previous points with the percentage of satisfaction (61.5%), we conclude that decrease of satisfaction percentage might have resulted from not sticking to the principles of building Bimaristans.

3. Conclusion

- As stated in the introduction, the defect in paying attention to the aesthetic side in the current therapeutic buildings was having a negative impact on the environment functional efficiency and consequently on the satisfaction and comfort of building users.
- Contemporary therapeutic buildings in the study area reflect Islamic heritage in a simple rate that ranges between 25-34%.
- There is a considerable awareness of the importance of adjacency with nature in therapeutic environments in the study area.
- Contemporary therapeutic buildings within the study area are far in their design and characteristics from Bimaristans.
- It is possible to establish therapeutic buildings with appropriate environment that enhances treatment process without full adherence to of the principles of Bimaristans building or Paradise Gardens. However, it is still possible to link between lack of such valuable principles and the lower building quality.
- The aesthetic and spiritual sense within the therapeutic buildings has a significant impact on users comfort and satisfaction, but it does not affect the efficiency of the functional aspect significantly as recognized by the majority of the sample involved in the study. As a result, that did not adversely affect the quality of the therapeutic buildings, its services or the functions established.

4. References **(All sources are in Arabic)**

1. Al-Hathloul, Saleh bin Ali (1414 AH) Arab-Islamic City: The Impact of Legislation on the Composition of Urban Environment, First Edition, Al-Sahn Press, Riyadh.
2. Judy, Muhammad Hussain (1997 AD) Aesthetics of Islamic Art, First Edition, Dar Al-Safaa for Publishing and Distribution, Amman.
3. Judy, Muhammad Hussain (1419 AH) Arab Islamic Architecture- Innovations & Aesthetics, First Edition, Dar Maysara for Publishing, Printing and Distribution, Amman.
4. Hammad, Muhammad (1401 AH) Thoughts about Islamic Architecture based on the Quran and Sunnah, First Edition, Riyadh.
5. Khulousi, Muhammad Majed (1999 AD) Hospitals and Health & Social Centers, First Edition, Dar Qabes, Beirut.
6. Khalil, Imad Al-Din (1401 AH) Nature in Western and Islamic Art, Second Edition, Al-Resalah Foundation, Beirut.
7. Eissa, Ahmad (1401 AH).History of Bimaristans in Islam, Al-Raed Al-Arabi Press, Beirut.
8. Mahdi, Muhammad Zaki (1983 AD) Landscaping in the Arab world, Al-Dar Al-Arabiyah Press, Libya.