



UNDERSTANDING SALUTOGENIC DESIGN APPROACH IN HOSPITALS

SHADRACH, NOBLE NICHOLAS; Arc. KIANEN, BONMENE; BRIGHT IZUU JOSEPH

ABSTRACT

Salutogenesis is the term used to refer to factors that enhance human health and wellbeing, instead of factors that cause ill health, known as pathogenesis. It is agreeable that quite a number of factors contribute to the mental and the physical wellness of an individual, as well as the ill health they experience. This work is aimed at taking a look at how the salutogenic approach has helped facilities like hospitals to improve on the health of her patients, instead of focusing more on the disease itself. Architects have taken advantage of this concept to come up with designs that will not only be functional and aesthetically pleasing, but also, contribute to the mental and physical wellness of patients. Hence, the author seeks to investigate the effectiveness of the salutogenic approach of design in hospitals and how much the well-being of users. To achieve success in this work, the author has conducted case studies, informal interviews, as well as the review of relevant literatures. On completion of this work, Architects and scholars would have understood the relationship between salutogenesis and architecture, and how their design can contribute to the well being of patients and users.

KEY WORDS: salutogenic, pediatric, design, maternity, hospital, enhance, circulation.

INTRODUCTION

1.1 Background to the Study

A hospital is an establishment that makes available a wide range of health care services to ill patients, pregnant women and wounded persons etc. They make use of medical staffs eg, doctors, nurses, pharmacist and some support staff to offer inpatient care to those who need very close medical attention and outpatient care to those who may need care but not consistent medical care. Hospitals give analysis and medical cure of mental and physical health issues, rehabilitation, surgery, physician and nursing training and health education programs. Several hospitals additionally, are used as centers for inventive study and medical technology. The users of every health care facilities centres on parents and children so, Maternity is the period during pregnancy and shortly after childbirth. It is a branch of medicine that concentrates in taking care of women during pregnancy and also during childbirth. Whereas Children are the blessings and delight of the society, the pride and strength of their parents and the nation. Their state of good health, free from illnesses is of utmost importance to their parents/guardians. Men go through a lot in trying to ensure that their family is not just in good health but also have shelter and food. This circumstances compels most men not to even take care of their health and as such gets ill suddenly. The effects of the physical characteristics of the spaces designed for patients in the hospital; the type of health care practices that are carried out in those areas, the social interactions, patients use of the spaces in the hospital, the values and meanings to them is what enhances the effectiveness of those spaces in respect to the salutogenic design approach. There has been little investigation that has evaluated what children think about hospitals and how they react to them as well as adults.

2.0 Aim and objectives

1. To investigate in other to appreciate the effectiveness of salutogenic design approach in hospitals.
2. To highlight some critical consideration when designing a hospital, bearing the salutogenic design approach in mind.
3. To further educate Architects, health-care planners and designers who have very little knowledge of the factors to be considered in applying the concept of salutogenesis.
4. To encourage the provision of a user friendly and all-inclusive health care facilities.

3.0 Research questions

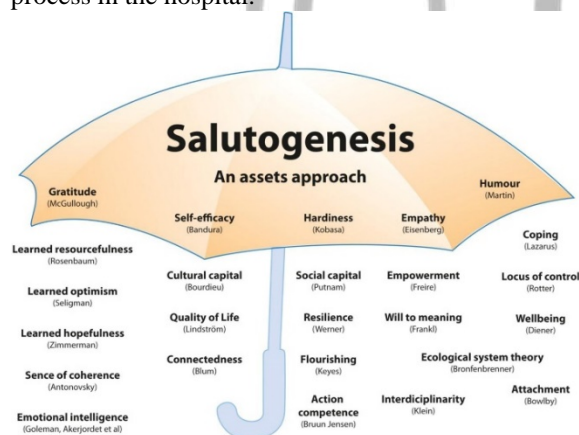
1. What is the relevance of the salutogenic concept to architecture?

2. How can an architectural design help the mental and physical wellness of patients, as well as their quick recovery?
3. What do Architects, health care planners and designers need to know about the salutogenic design approach?
4. Is there a defect of the salutogenic design approach in healthcare facilities?

4.0 A Study on Salutogenesis Model (THE SALUTOGENIC DESIGN MODEL)

Salutogenesis is a term composed by Aaron Antonovsky, a professor of medical sociology. The term defines an approach focused on factors that promote human health and well-being, instead of ones that lead to sickness (pathogenesis). In particular, the "salutogenic model" is interested in the relationship between stress, coping and health. It focuses on the promotion of sound health routine, other than on how to avoid health risks. Health is understood to be a complex concept which includes social, physical, spiritual and mental health. Health is also seen as a life time active process with people participating actively in a context. Finally, health is not seen as an end itself rather as a means of living a good life (McCuaig et al., 2013, p.113). Furthermore, the customary theories on coping and stress has its major focus on the idea of control. In salutogenesis, the focus is on the person's ability to use generalized resistance resources, both external and internal, within reach to manage ubiquitous stressful conditions. According to Antonovsky, the actual beginning is that life is a chaos in which we must steadily relate to change. Our ability to manage this chaos becomes important. According to Antonovsky, this is the salutogenic view of coping and stress: "... life is inherently full of stressors, with life-situation stressor complexes by far deserving most of our attention of we wish to understand either health or disease. Focusing on health, I expressly rejected the implicit assumption that stressors are inherently pathogenic. Their health consequences can only be understood if we understand the coping process. (Antonovsky, 1992, p. 48) In its narrower meaning, salutogenesis is often equated with one part of the model, the sense of coherence, defined as: "... a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that one's internal and external environments are predictable and that there is a high probability that things will work out as well as can reasonably be expected. (Antonovsky, 1979, p. 123).

Generally, salutogenesis refers to a scholarly orientation focusing attention on the study of the origins of health and assets for health, contra the origins of disease and risk factors. In this regards, an asset for health that was studied is the use of therapeutic gardens, the effects of colours on patients and some parameters to aid/facilitate the healing process in the hospital.



4.1 Therapeutic/Healing Gardens

Gardens have been used to assist in the healing process all through history. However, with the upgrade in medical technology in the 20th century, the use of gardens as healing elements began to reduce. Fortunately, with the recent interest in alternative and complementary therapies, which is focused on healing the whole person –spirit, mind and body– instead of just relieving symptoms, the interest in garden as healer has been much revived. Research has shown how beneficial it is to use gardens as a form of therapy. Roger Ulrich, a professor and director of the Center for Health Systems and Design at Texas A & M University, found that viewing natural scenes or elements increases the rate of recovery from stress by evoking positive feelings, effectively holding attention/interest, reducing negative emotions and reducing or blocking stressful thoughts. Based on findings by Ulrich and others, it could be reasoned that any garden can be referred to as a healing garden. However, for the basis of this study. Eckerling's definition of a healing garden states that: "a garden in a healing setting is designed to make people feel better" (Eckerling, 1996). The aim of a healing garden is to reduce people's stress, give them more comfort and safety. These thoughts take on special definitions in a healing environment.

4.2 Functionality

- a. All entrances should be people-friendly and welcoming. Offer different spaces for the different categories of users.
- b. Proffer social comfortable surrounding with many sitting places for patients, staff and visitors.
- c. Make available many options for patients and users of the facility to relate with nature through their senses and/or hands-on activities.

4.3 Visually Pleasing

If the garden is not visually pleasing, it hasn't fully achieved success. This is important because the garden would need to accommodate the weaknesses of the users of the space.

Effectiveness

It is essential that the garden design produces the desired result - be effective. Finally, healing gardens are expected to proffer pleasant environment to yield restorative out-turn for its end users.

5.0 Effects of colour on children.

Colour schemes for children facilities include the predominant use of the three primary colours of blue, green and red. A good selection of these colours can be used to paint the wards, the reception, and other areas where needed. The selection can be made from combination of colours.

Blue: Correct shade of blue is best used for entrance of hospitals. It lower body temperature, slows the pulse rate, relieves migraines, muscle cramps and headaches. Due to its calming and soothing nature, it could be used for a child's bathroom and bedroom.

Green: This is the colour of intellect and concentration, the most restful colour to the eye and calming in a neutral, positive sense. It promotes feelings of harmony and well-being, security, nature, balance and stability. It is best used for children's learning areas (libraries and classrooms).

Red: It is known as a sociable and lively colour which best arouses excitement in children. It could be used in children's play room with a combination of yellow, orange or purple. It should never be used in a baby's bedroom.

Yellow: This colour heightens creativity of the child, energy levels and inspires the intellect. It deals with feelings of oppression or heaviness and brings feelings of happiness and warmth. It is one of the most proper colours for a child's play area because of its inviting and friendly nature. It encourages socialization among children. It should not be used in painting bedrooms as it is not a very restful colour.

6.0 Other Parameters to Consider in a Child's Space

- a) Anthropometrics/Scale: Equipment and facilities used in any of the spaces should fit the child's anthropometrics, the likes of furniture, play materials, and bathroom equipment.
- b) Textures: Quite a different approach to interior design and furnishing is needed for children facilities. The setting should promote a "kindergarten environment", however not at the expense of medical efficiency.
- c) Finishes: Walls could be finished in claddings of soft materials like chip board fished in bright colours of careful combination of primary colours.
- d) Edge Treatment: Sharp and rough edges usually are to be rounded to reduce injuries for example in the play areas, and classroom.

7.0 Architecture and salutogenesis

According to dilani (2006) where he introduced the salutogenesis notion to health care design which has led the international academy for design and health to promote the slutogenic theory in health care architecture. By this notion he has gained popularity and recognition in healthcare architecture. He's findings presents the salutogenic design approach as an aim and objectives in healthcare architecture. This approach in some cases has been used by architects and wrongly represented by some who doesn't have a grasp of what the salutogenic design approach mean.

There is usually a radical difference in the behaviour of both humans and animals when threatened and when they are excited, according to Calhoun 1970; Isorich, Englmann, Landgrat & Fuchs 2001; Salmivalli 2001.) When they elated with lofty emotions, they tend to be more accommodating and friendly. It is important to note that these emotions are real and have long lasting implications (Rudd, Vohs & Asked 2021). More research is needed on this subject matter, because it is relatively new. But it appears that most of the neurotransmitters react to environmental

stimuli, and in turn, react to design (Golembeiwski 2010). Acetylcholine, for instance, is responsible for moderating balance, homeostasis, muscular tone and most of the things we consider to be comfort, like body warmth, the sense of touch and hunger (Changeux & Edelman 2005). While light is thought to be responsible for the moderation of serotonin, as well as the hormones on the pathway of serotonin, which includes: Melatonin (Reo et al 1992). In turn the above mentioned hormones have an influence on rhythms of circadian, as well as the control of inflammation and some other things. Also, the mobility of gallstone is not left out in the list. One neurotransmitter that is mostly closely associated with the emotion is the dopamine, and can be highly reactive to environmental stimuli (Koppiseti et al 2008).

Dopamine is such an interesting neurotransmitter because of its direct implication in many mental illness (Howes et al 2013). Dopamine is strongly connected to the limbic section of the brain (Floresco, Blaha, Yang & Phillips 2001), this one area characterized as the centre of narrative cognition and emotional balance. The hypothesis is that dopamine waters down the intensity of our experience of stories. These stories are products of information gathered from our immediate environment by the hippocampi (which moderates the structure of story) and the amygdala (which is responsible for moderating ipseity: (Le Hunte & Golembeiwski 2014)

Unfortunately, in the case of mental illness, when the dopamine is malfunctioning, the patient is likely going to suffer too much intensity for matters of very little consequence, and rather feel nonchalant on very serious matters.

There is yet another limbic organ called the hypothalamus, which works like a switch: when the other organs send a signal that there is danger in the emergent story, the hypothalamus has a way of switching all the thought intensive, time-consuming, creative and considered parts of the brain off, and instead, it switches on the automatic and instinctive systems. The hypothalamus also activates the endocrine system to switch into a kind of emergency mode, by this, it short circuits the normal endocrine cascade. The processing of cholesterol into oestrogen are being blocked progesterone, testosterone and other hormones that are desirable and essential. Instead, cholesterol is left in its raw state, ready to clog the vascular (this is useful in the sense that it serves as first line defence against bleeding or heart failure).

Also, hormones that are important in physical emergency are released, such as: arginine vasopressin, corticotropin and cortisol. How we feel on an emotional level is been dictated by these hormones. But even more than that, they protect the body from dehydration and blood loss, which is referred to as famine, for example.

However, it is true that we don't always need to feel panicked or angry, this is because most of the hormones that trigger negative responses are rendered redundant when the physical environment is safe and welcoming or when health building was a goal during the design and construction of the physical environment. The epidemiology of : lifestyle disease' are directly associated with all the negative hormonal responses we see here. Stories that 'look good for me' on the other hand, especially if the associated experiences are awe inspiring, the rostral dopaminergic pathway is enabled to open, and in turn, a whole set of desirable behaviours and endocrinal effects, which feel good and aids recovery (Golembeiwski 2012b, 2014a)

AESTHETICS AND THE BUILT ENVIRONMENT AND HEALTH

In modern world, buildings (accommodation) has been customized as a resource to protect against discomfort, danger, wildlife, deteriorious effects of weather and social threats. The role of Architecture in achieving these protective purposes is sure to be fundamental.

However, it is important to note that the supportive effective of architecture goes beyond the physical, but psychological too. If people can not find rest and relief at home, despite the pressures of life, it will result to a compounded mental and emotional strain, enough to cause debilitating mental illness, possibly without any trace of biological or genetic dysfunctions (Golembeiwski 2013).

Shelter varies from type to type, and from quality to quality to quality. Even when we have achieved the basic need from the wild and other humans, and the weather, we continue to tailor make our environment be aesthetically pleasing. This is usually an attempt to make the environment better on a psychological level. And the evidence is usually the improved mental health of the occupants.

It appears quite superstitious and occult that aesthetic has any impact and health (and even on mortality), and for this reason, it is not widely accepted as it should be (Golembeiwski 2016). The aesthetic impact on health, as a concept, has been scientifically tested several number of times, these include dozens of studies against a null hypothesis - this a statical method used to demonstrate causality.

A systematic review in 2005, located and analysed 30 peer-reviewed articles. This clearly showed this effect to be very significant and of course reliable (Dijkstra, Pieterse & Pruyn 2006), these also include findings that are quite unbelievable - for example, 30.8% lower mortality were found when patients were assigned to sunlit wards for psychiatric disorders (Beauchemin & Hays 1996, 1998).

Taking salutogenesis as a point of view, such findings are really very important. This is true because when people are in good health, they demonstrate a surplus of resistance resources, which is theoretical. So, aesthetic improvements are redundant, but when people are not in good health, they tend to suffer in the balance between deterioration and recovery. So any influence that must be tagged genuine, whether for better or worse, should be seen in the outcomes.

Our bodies have different ways it relates with the outside world. The first of them is the physical relationship: there are quite a number of restrictions in the built environment like fences and walls, as well as opportunities like pathways bridges or windows, and many of the choices we make are influenced by these factors. Taking a closer look, some are quite significant, for instance, there is only but a slight phenomenological difference between a right turn and left turn, even though they are in opposite directions. But our behaviour is been moderated by many physical opportunities and restrictions, and are intended to do so. For that reason, they stand out as an important target for initiating design policies that aim to create environments that are safe and healthy, for instance, some regions and cities around the globe are coming up with some design guidelines that will encourage people to use the stairs instead of the lift, and walk or cycle instead of using the car (City of New York 2013; Jackson & Sinclair 2012). For the physical environment to be an agent to improve physical health, physical interventions like this are often thought to be the way forward - it is called 'fit city'.

For the case of people recovering in the hospital, there will only be little use of the 'fit city' initiative. This is because, one place lifts are highly required, as well as nearby parking is in a hospital, because when people are sick, it certainly won't be the right time to prescribe or recommend any exercise or physical therapy.

Reviewing the impressive results of this concept, Dijkstra et al (2006) discovered that none of the health improvement of patients in hospitals or any health institution was as a result of the presence of more steps or longer corridors. The causal factors were more psychological than physical. They were more of aesthetics rather than structure.

As pointed out from the beginning of this work, the impact of the built environment on health is focused on how well it is able to provide the basic elements needed in a shelter, which are functionality and aesthetics. This of course, is the traditional way of placing our understanding and judgement on the effectiveness of the built environment. In the health care system, this very true and its top requirement is that the built environment enhances a efficient manageability of patients, better infection control, more reliable clinical procedures, etc.

8.0 Conclusions

The case studies were primarily done to know the spaces needed in a hospital. It was also carried out to understand the basic operation of a pediatric Centre and the future demands of its users. Also, the following knowledge as listed below was gathered.

1. A pediatric Centre should have spaces which follow the normal hospital flow pattern (the functional relationship diagram of a hospital design) and at the same time, should be child friendly to give the patient and users what sickness has denied him or her from.
2. Provision of outdoor and indoor recreational areas, help the users to release tension caused by the restriction placed on his or her behavior by the hospital spaces and it also helps the users to interact with the people around, through which the patient's imagination and healing process is revived.
3. The need for observation or supervision is greater in a pediatric Centre than privacy. Thus the use of transparent partitions or glass partitioning is very necessary to facilitate ease of supervision.
4. Provision of family areas within a hospital or healing Centre promotes good interaction between the child and his family.
5. Creation of gardens for visual interest speeds up the healing process.
6. Paintings, wall hangers and brightly coloured walls in the spaces make the child comfortable and feel at home.

REFERENCE

Antonovsky, A. (1972). Breakdown: A needed fourth step in the conceptual armamentarium of modern medicine. *Social Science & Medicine*, 6(5), 537-544. [PubMed] [CrossRef]

- Antonovsky, A. (1979). *Health, stress, and coping*. San Francisco: Jossey-Bass.
- Antonovsky, A. (1987). *Unravelling the mystery of health*. San Francisco: Jossey-Bass.
- Antonovsky, A. (1996). The salutogenic model as a theory to guide health promotion. *Health Promotion International*, 11(1), 11. [CrossRef]
- Beauchemin, K. M., & Hays, P. (1996). Sunny hospital rooms expedite recovery from severe and refractory depressions. *Journal of Affective Disorders*, 40, 49–51. [PubMed] [CrossRef]
- Beauchemin, K. M., & Hays, P. (1998). Dying in the dark: Sunshine, gender and outcomes in myocardial infarction. *Journal of the Royal Society of Medicine*, 91, 352–354. [PMC free article] [PubMed]
- Bitterman, N. (2013). Psychiatric ward dayroom: Human factors and design issues. In A. Dilani (Ed.), *World Health Congress*. Brisbane: International Academy of Design and Health.
- Calhoun, J. B. (1970). Population density and social pathology. *California Medicine*, 113(5), 54. [PMC free article] [PubMed]
- Changeux, J.-P., & Edelman, S. (2005). *Nicotinic acetylcholine receptors: From molecular biology to cognition*. New York: Odile Jacob.
- City of New York. (2013). *Active design: Shaping the sidewalk experience*. New York: NYC.
- Dancer, S. J. (2004). How do we assess hospital cleaning? A proposal for microbiological standards for surface hygiene in hospitals. *Journal of Hospital Infection*, 56(1), 10–15. [PMC free article] [PubMed] [CrossRef]
- Dijkstra, K., Pieterse, M., & Pruyn, A. (2006). Physical environmental stimuli that turn healthcare facilities into healing environments through psychologically mediated effects: Systematic review. *Journal of Advanced Nursing*, 56(2), 166–181. [PubMed] [CrossRef]
- Dilani, A. (2006). A new paradigm of design and health in hospital planning. *World Hospitals and Health Services*, 41(4), 17–21. [PubMed]
- Dilani, A. (2008). Psychosocially supportive design: A salutogenic approach to the design of the physical environment. *Design and Health Scientific Review*, 1(2), 47–55.
- Donne, J. (1624). *Devotions upon emergent occasions and severall steps in my sicknes*. London: Thomas Iones.
- Floresco, S. B., Blaha, C. D., Yang, C. R., & Phillips, A. G. (2001). Modulation of hippocampal and amygdalar-evoked activity of nucleus accumbens neurons by dopamine: Cellular mechanisms of input selection. *The Journal of Neuroscience*, 21(8), 2851. [PMC free article] [PubMed]
- Foucault, M. (1977). *Discipline and punish: The birth of the prison*. (A. Sheridan, Trans.) London: Allen Lane.
- Frankl, V. E. (1963). *Man's search for meaning: An introduction to logotherapy*. New York: Pocket Books.
- Golembiewski, J. (2010). Start making sense: Applying a salutogenic model to architectural design for psychiatric care. *Facilities*, 28(3/4), 100–117. [CrossRef]