Quality in Healthcare: The New Frontier of “Patient-Centered Care Approach” in Day Clinics

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Abstract: This article aims to study methodologically hospital buildings and, in particular, the design of day clinics in the recovery area. The definition of design guidelines to improve and qualify the day clinic, enhancing their performance, takes into account the fact that the established requirements of medical protocols must be accompanied by those new requirements related to the massive evolution in health organizations. Changes in medicine, culture and society have necessarily led to a new formulation of the hospital model and the introduction of the theme of the humanization of the curing process has conditioned the morphological-space configuration and the presence of new relationships and spatial functions in the hospitals. The research of this article attempts, therefore, to explore the use of technology to improve the quality of day clinics' design, formulating strategies that contribute on one side to facilitating the efficiency of service, and on the other side to making the user feel at ease in a welcoming and comfortable environment.

Key words: Quality in healthcare, day clinics, patient-centered care approach, technology, healthcare structures, healthcare outcomes, strategies.

1. Introduction

The theme of the humanization of the curing process, intended as attention to the person in his/her totality, made up of organic, psychological, and relationship needs, is an important actuality today.

Over the last several decades in fact, a growing attention has developed toward the definition of planning solutions not solely centered on the functionality and efficiency of sanitary service, but also on the humanization and comfort offered to patients, visitors, and to all the medical, social assistance, administrative, and technical staff [1]. As a result, the quality of the structures and the definition and design of internal and external spaces that make it possible to promote the step away from “disease-centered” medicine toward “patient-oriented” medicine which produces a multiplicity of

possibilities for the concept of humanization, become of vital importance (Table 1).

The recovery experience in the hospital can be described as a psychologically traumatizing event, characterized by a series of physical and psychic disadvantages which add themselves to the suffering derived from the specific noxious state that motivated the recovery in the first place [2].

From here comes the interest in a medicine able to accompany the patients and the families along the course of the sickness, humanizing the cures, and sustaining the assistants beyond the routine approach to the sick person and toward his or her pathology.

This approach begins from the presupposition that in a hospital the patient is in a very fragile and sensitive state. The reasoning on the humanization of hospitals cannot therefore disregard awareness of the fact that the safety of the patients is progressively becoming one of the major factors in the distribution of assistance and in the planning of hospital spaces. Physical safety (prevention of accidents, falls, and

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Table 1 Difference between conventional care and people-centered care.

Conventional ambulatory medical care in clinics	People-centered care in clinics
(A) Focus on illness, diseases and cure	Focus on health needs
(B) Relationship limited to the moment of consultation	Enduring personal relationship
(C) Episodic curative care	Continuous and person-centered care
(D) Responsibility limited to effective and safe advice to the patient at the moment of consultation	Responsibility along the life cycle
(E) Users are consumers of the care they purchase	People are partners in managing their own health

stumbles), clinical safety (prevention of medical errors, misapplication of therapy, contraction of nosocomial infection), and psychological safety, (reduction of stress factors) are the key principles to consider in an approach focused on the patient [3]. The principle of patient safety aims to contain factors that may cause harm to the patient during his or her path towards health.

The planning of the internal atmosphere and of the relative comfort must therefore mainly take account of the categories of the structure’s occupants, the duration of their stay, and, above all, of the immunological and psychological defenses of the occupants: the sanitary and technical staff, but most importantly, the patients.

In such a scenario, the inpatient sector is the place where the patient passes the greater part of the recovery period, the space in which cures are administered, where the current state of health is monitored, where visits and therapy occur, and, at the same time, the place where activities tied to the personal and private life are conducted. All this means that the planning of such an area must be extremely accurate and take account not only of the “technological” aspect of the problem, but also of the “human” aspect. In other words, all those devices which permit the patient to pass his or her time in the structure as serenely as possible, devices linked to the new frontier of “Patient-Centered Care Approach”, developed in-sync with technological progress, must be considered fundamental [4].

We are constantly becoming more scientifically aware that there exists a strong connection between the environment and conditions of well-being or

illness. Certain conditions tied to the architectural dimension can heavily impact the state of health, noticeably affecting the well-being of each and every user. This means that unhealthy environments provoke states of psycho-physical negativity; on the other hand, environments that are conceived and planned correctly, can positively affect the psychological state [5].

2. Method and Materials

2.1 The Quality of Process

The project of humanizing hospital spaces is based on the similarity of determined requisites of quality which derive from basic concepts of acceptance and orientation. The requisites can be defined by means of a physical-spatial dimension and a link to the sphere of daily life and experience. Indeed, it is not sufficient to take into consideration only those requisites that respond exclusively to functional, technical, and organizational needs. Such needs can increase the level of comfort of an environment, and still that environment might be perceived and lived as alienating, if the expectations and requests of a psychological-perceptive nature of the users and operators are not also respected.

Therefore, the design of the spatial-functional, and psycho-sensorial characteristics of the hospital environment influences the conditions of well-being of its utilizers, and the clinical outcomes of patients, and contributes to defining the quality of the hospital structures.

The growing interest demonstrated in the relation between the characteristics of physical space and the process of healing of the patients, has favored the

diffusion of Evidence Based Design (EBD). This interest has defined the idea that, by means of the planning quality of spaces, is possible to create more secure and less stressful hospitals, which promote patients’ healing, and which are more likeable workplaces for the staff [6-9].

The widespread diffusion of such an approach has been favored by the growing body of scientific evidence which has showed and tried to make measurable the benefits of certain planning choices on the well-being and healing process of patients. In fact, project planning centered on the relation between the characteristics of the physical environment and its effects on health and well-being has been well-documented by international scientific literature.

2.2 Users and Framework of Needs

The design of the internal environment and its relative comfort must take account principally of the categories of the structures’ occupants, the length of their stay, and, above all, the immunological and psychological defenses of the occupants, the sanitary and technical staff, but most importantly, those of the patients.

The necessities that complete the framework of needs to be satisfied, that are at the base of the planning process of convalescence, are linked to patient-centeredness, which predicts a new centrality on man in the planning process of places of cure, whether it be the patient himself, a visitor, or the health operator. These new necessities are attributable on one hand to rapid progress of research in the biomedical and biotechnological fields that makes possible diagnostic and intervention activities which are increasingly more complex and advanced. On the other hand, these necessities derive from the change in the medical population which is increasingly older and characterized by therapeutic needs and clinical contexts tied to chronic disease, as a result of expanding life-expectancy. These needs are not only those transitory physio-clinical ones connected to the

Fig. 1 Users and framework of needs.

state of health and the relative psycho-emotive conditions connected to disease, but also those of a personal, social, and cultural nature that render the individual unique: his or her habits, the ways of relating themselves with people, perception of the environment, and individual preferences.

Inasmuch as hospitalization constitutes trauma for the invalid who is isolated from his nuclear family and catapulted into a foreign, hyper-technological environment, it is important that the hospital stay, compatible with the clinical state, be as short and efficacious as possible.

The framework of needs makes reference to the classes of needs, tied to the humanization of the places of cure, of psycho-emotive well-being, usability, safety, and, regarding the user class referring to caregivers, also work-related well-being must be considered (Fig. 1).

3. Results and Discussion

3.1 The Recovery Area

The humanization of sanitary structures regards both private spaces such as the inpatient rooms, and public spaces such as walkways, reception, entrance halls, and corridors. The sensation of indoor well-being can thus come to be perceived when other aspects besides the physical and chemical parameters of the environment are evaluated.

The recovery areas represent the functional sector of the hospital principally influenced by the modification of the social-assistance needs.

In the last several decades the distributive-functional organization of the recovery area has undergone constant transformation following the modification of the framework of needs whether from a strictly hygienic-sanitary point of view, or from the viewpoint of an ever more concrete humanization of hospital spaces.

It has been shown that it is not possible to isolate the planning of inpatient areas from the general concept of the functional distribution of the entire hospital complex. The general organizational choices such as: the location of building entrances, the level of technological content in the hospital, the type of diagnostic services and cures offered, reflect, from a design point of view, on the organization of inpatient areas, influencing their internal functional distribution and location with respect to the other areas of the hospital.

For a correct planning of the functional area dedicated to inpatients, it is necessary to interpret attentively the needs of all the users involved in any way, analyzing all the activities that will be conducted on the inside of every single functional unit.

Day clinics in particular represent one of the most representative units of the whole area, where all the users are involved, and where a great number of activities are conducted.

3.2 Day Clinic

The term “day clinic” applies both to the area where actual medical visits take place, as well as where the patient is prepared before an examination or treatment.

In the first case, the day clinic area comprises: a space dedicated to medical visits, with a bed or couch, a space for interviews and discussions (between staff and patients and/or family and friends, or between members of staff), a space for exam support (for work planning, a space for storage of medical equipment and materials).

In the second case, by reason of the fact that the activities which take place in the day clinic are mostly related to nursing, the space should comprise: a healthcare area for the preparation of patients, or for specific treatment (both of these activities are done on the hospital bed and/or on the recliner), a work area for the staff, and a meeting area (for meetings between staff and patients or their family members, or between members of staff).

In relation to the many different activities undertaken in the day clinic, this second type of space should be characterized by a high flexibility of usage, particularly in relation to the diverse needs connected to specific treatments.

Day clinics are generally used by personnel with different roles and tasks (doctors, specialists, nurses, technicians, therapists, etc.) who all work contemporaneously in the same spaces.

Furthermore, the patient is usually accompanied by a family member or friend who sometimes remains in the space during the examination or the treatment.

The principal medical activities comprise: the patient’s medical history, carried out at a desk with paper and pen or a computer, discussions with the patient and with family and friends, the appointment carried out by means of an objective exam in the bed/recliner, and recording the data from the appointment, and prescriptions of the treatment. Additionally, the medical personnel can carry out activities related to the consultation of paper or digital documents, or specialized consultation done together with other professionals.

The work space comprises: a bed, a stool, a free-wheeling, upright examination lamp, a stand for an IV, an X-ray screen, and a communication device for emergency calls. Near the bed, there should be spaces for hand hygiene, and other clinical uses. Such spaces should have a sink, a dispenser for soap or disinfectant, paper-towel, a waste bin, and a flat surface, for example a table or a countertop. There should also be storage space of various materials and

medicines, which can be stored in a cupboard, refrigerator, or on a cart, depending on the nature of the items.

The furniture and equipment of the office area should comprise: a desk, a chair, a bookcase, a chest of drawers, a filing cabinet for archiving clinical documents, a computer and printer, a table-lamp, and a phone.

In many clinics, the patient may have to undress for some examinations, so there should be a dressing room as well.

During conversations between health personnel and patients, sensitive information is often discussed which requires a certain amount of discretion. A lack of privacy can generate anxiety and diminish the quality of any communications [8]. This can render examinations, check-ups, and patient preparation more difficult.

Varying levels of privacy must be guaranteed whether it be for those users who are already present in the area (health personnel or otherwise) or for those who will enter the area for other reasons apart from the examination and treatment of the patient there present (taking or returning materials, communication with the personnel present in the clinic, etc.), as it can be seen in Fig. 2.

The perception of a welcoming atmosphere, more similar to a hotel than an institution, plays an important role in regards to the patient’s comfort, facilitates an inclination towards dialogue, and has an impact on patient satisfaction with the facility [10].

The different activities conducted by the medical personnel (examinations, interviews, conversations, patient preparation and therapy, administrative work, etc.) all require different visibility conditions.

Every space (exam and treatment areas, therapy preparation areas, interview/discussion areas, individual work spaces, etc.) must, therefore, be equipped by adequate artificial lighting that aids work, and that guarantees visual comfort in relation to specific tasks [11].

At the same time, natural light inside the clinic has a positive effect on work efficiency, on reducing

Fig. 2 Example of day clinic.

medical errors (recording errors, therapy preparation errors, errors in administering medicines), and on mood, increasing general levels of satisfaction. As such, natural light is of great importance (Fig. 3).

In addition, numerous studies have in fact shown that even just seeing and observing natural environments is able to produce benefits in patients effected, notably reducing the level of stress and improving psycho-physical conditions [12-15].

It is important that users be able to correctly identify the various spaces in the clinic, especially the examination and treatment areas (Fig. 4).

Furthermore, it is necessary to consider that during discussions between patients, their family and friends, and medical staff, critical situations may arise that affect physical health weakened by sickness, or emotional health, due to the nature of the news. In such cases, medical equipment (carts, wheelchairs,

Fig. 3 Ample window for daylight.

Fig. 4 Example of examination and treatment areas.

defibrillators, etc.) may need to be brought in, and they must be able to be maneuvered with ease in the area, while also guaranteeing patient safety.

In fact, it is of fundamental importance, in view of the goal of the humanization of hospital spaces, that there are services and opportunities offered to the family and friends of patients.

It is a positive thing to give to a member of the family, or a caregiver, the possibility to stay with the patient during conversations and discussions, medical

exams, the different phases of preparation, or even the treatments.

The possibility of using computer devices for compiling and managing a patient’s clinical information, represents an advantage in terms of security both for the personnel as well as for the patient, and also in terms of work-related well-being for personnel. One of the qualifying aspects of a clinic, is precisely the presence of computer devices which aid those members of staff responsible for discussions, tests, and treatments, to look up and consult a patient’s clinical information, and reports of diagnostic test [16].

The arrangement of computer devices in the staff work area is important in order to maximize visual comfort, and aid information exchange with the patient.

Therefore, when we speak of “day clinic”, we intend a clinic specifically planned with a “Patient-Centered Care Approach”, which takes into consideration all the potential users and specific requirements for the same users (Table 2).

Table 2 Requirements and design criteria for day clinic.

Day clinic			
Users	Framework of needs	Specific requirements for users	Criteria
Patient	Psycho-emotional well-being	(A) The patient needs visual and aural privacy	-Have movable screens/curtains for visual separation between the examination bed and the rest of the clinic that screen the examination; -Good acoustic insulation between the clinic and adjacent spaces that guarantees adequate audible privacy.
		(B) The patient needs a view of nature	-Have ample windows that open on the outside with natural scenes of good quality that can be seen from any seat.
		(C) The patient needs to be able to stay comfortably in the area for a long period of time	-Have an area of at least 1.5 square meters per seat, and use ergonomic seats in relation to the needs of the various users.
		(D) The patient needs to not be put under emotional stress	-Provide devices for covering medical equipment whether fixed, or mobile, from the patient’s view during exams and/or the administration of treatments.
	Usability	(E) The patient needs to be able to identify the day clinic area	-Divide the area into flexible nuclei of varying dimensions with easily movable seats; -Planning of well-finished colors and furniture of high perceptual quality, chosen depending on the type of user and to facilitate the identification of the space.
		(F) The patient needs to be able to get around easily in the area	-The shape, dimensions and equipment must allow: (1) Safe and easy movement of users with walking assistance, and with other medical equipment; (2) Walking with fixed supports; (3) Use of the space by users in any physical or cognitive condition; (4) Adjustability of furniture and equipment.

Table 2 to be continued

	Safety	(G) The patient needs a guarantee of control from clinical risks (Safety) and protection for his/her physical safety (Security)	-Provide devices and furniture for storage of patients' personal belongings and garments with direct visual contact from the examination bed and from the waiting area where the family member is.
Caregiver	Psycho-emotional well-being	(H) Members of the personnel need to have social interaction with fellow members of staff	-Arrange furniture and equipment so as to allow communicative exchange between health personnel.
	Safety	(I) Members of the personnel need to be able to perform their tasks in safe conditions	-Provide devices that can inhibit access to the clinic during operations that require particularly private conditions. -Provide devices and furniture in the clinic for secure guarding of staff personal belongings, and work belongings.
	Work-related well-being	(L) Personnel members need to be able go into a room and wash their hands while still maintaining visual contact with the patient	-Provide dispensers for hand hygiene; -Placing the sink in such a way so that it is clearly visible improves hygiene. Place it in a location where caregivers can wash their hands and still keep direct visual contact with their patients; -The position of the sink must allow for communication between the caregiver and the patient while the former is at the sink.
		(M) Personnel need an adequate work area with the necessary equipment to complete their tasks and horizontal work surfaces	-Provide computer devices for digital processing, and archiving for paper documents, and devices for viewing diagnostic images by multiple users contemporaneously; -Provide adequate horizontal work surfaces (support for caregivers to complete their work to the fullest).
		(N) Personnel need sufficient lighting to work	-Have lighting systems with scattered light that is uniform, indirect, and not blinding, dedicated to the various work areas, with characteristics and arrangements that do not cause disturbance, and with an adequate light quality (hot $\geq 3,000$ °K), that is suited to the visual tasks of the personnel.
Family	Psycho-emotional well-being	(O) Family members should be able to stay comfortably in the clinic for long periods of time, and be able to psychologically support the patient	-Have a dedicated, outfitted waiting area for a family member; -Provide furniture and other equipment for long-period stay of a family member in the meeting area, close to the examination/treatment area, with specific areas and devices, that does not inhibit the work of health operators; -Arrange furniture and other devices so as to allow psychological support to the patient during discussions while at the desk in the personnel area.
	Usability	(P) Family members need to be able to identify the day clinic area	-Place signage and other implicit elements that facilitate recognition of the clinic and its function, or design solutions that guarantee immediate identification/recognition of clinic areas as separate from waiting rooms, reception, or the hallway network.
	Safety	(Q) Family members need to have easy visual contact with hospital personnel	-Arrange furniture and equipment so that they do not impede the view of the patient during operations in the clinic.

4. Conclusions

The research, through several steps, allows us to understand how to create a latest generation day clinic that, linked to the new frontier of “Patient-Centered

Care Approach”, developed in-sync with technological progress.

Design changes are effected to make the hospital atmosphere and environment dedicated to hospitality, as similar as possible to the atmosphere and

environment of daily life.

Since the processes of change in hospital structures necessarily need strategic management in order to be controlled, oriented and applied, the formulation of design guidelines through technical data sheets for a day clinic model represents the starting point for designing a highly innovative health facility that can meet the needs of individual users by adapting to the rapid changes taking place in the healthcare system.

The patient must be placed in a condition which enables him or her to be able to take control of his or her healing process, synchronizing themselves with the emotional, intellectual, and sensorial aspects of his or her personality.

In light of this, it can be understood that sanitary structures which are places of cure, but also places of sickness and discomfort, need attentive planning capable of creating adequate conditions of well-being and comfort, and the criteria highlighted in the paper contribute on one side to facilitating the efficiency of service, and on the other side to making the user feel at ease in a welcoming and comfortable environment. By using these design criteria and incorporating evidence-based concepts, the new model proposed of day clinic will bring innovation in the traditional organization of the recovery area. It anticipates future needs, and allows for any changes that depend on the various hospital needs.

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