Art and Healthcare - Healing Potential of Artistic Interventions in Medical Settings

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Abstract. The stereotype of a machine for healing seems to be well rooted in common thinking and social perception of hospital buildings. The technological aspect of healthcare architecture has been influenced for several years by three major factors. The first is linked to the necessity of providing safety and security in the environment of elevated epidemiological risk. The second concerns the need for incorporating advanced technology required for medical equipment and building infrastructure. Finally, the third relates to Cartesian dualism in medical sciences. Fortunately, healthcare architecture of 21st-century is in the process of dynamic transformations resulting from the change in approach to patients. The holistic perspective gradually enters into medical sciences, and as a result a patient is perceived as a human being whose needs are discussed on three equally important dimensions: biological, social and psychological. The new trend has influenced the design process of contemporary hospitals. One can observe a turn from the primacy of medical technology over environmental conditions towards the balance between medical requirements and psychological and social needs of hospital users. The research on the impact of hospital environment on therapeutic process gave rise to a new trend of incorporating arts into the space and form of medical facilities. Both architecture and interior design details are more carefully negotiated in terms of aesthetics. Designers expand the possibilities of exhibiting visual art in functional and spatial arrangement. The initiatives introducing artistic objects, installations and activities into medical spaces aim at increasing the efficiency of medical services, transforming the image of sterile hospital architecture and introducing high quality public space. These interventions generate the impact both on micro and macro scales and they concern several fields of activity and forms of art. The paper presents the scope of possibilities for introducing art into contemporary medical spaces and discusses the influence of selected solutions incorporating artistic interventions on healthcare users.

1. Introduction

Hospital is the highest placed facility in the system of organizations providing medical services. Its architecture is created with accordance to the rules that are subordinated to medical technology and planned healing procedures. The increased epidemiological risk of the hospital environment is due to the concentration of people with varying severity of illness in one area. Most architectural solutions are designed to minimize the risk of transmitting infectious agents between patients, attendants and their medical staff. The general hospital model still focuses on paradigms from the nineteenth century based on, among others, guidelines formulated by the famous nurse, Florence Nightingale. Safety in the facility is ensured by providing fresh air, clean water, functional drainage system and clean natural lighted rooms [1]. Popularisation of antiseptics and aseptic principles has consolidated the form of protection...
against infection by using disinfection and sterilization. As the result, in most of the investments connected with medicine, the dominant aspects are usefulness and sustainability. Minimizing architectural qualities fosters maintaining sterile conditions and lowers the costs of investment, which are still high due to the multitude of technological solutions in these facilities. Most hospital buildings around the world are characterized by a monumental scale of block with an internal spatial arrangement based on long corridors systems which connect closed set of rooms with clean, sterile interior design. Such characteristics preserved the visual stereotype of the medical architecture as a not user-friendly area.

The industrial image of a hospital is strengthened due to technological advancement in construction and medical equipment, which has significantly contributed to the quality of medical services provided. The proven effectiveness of reducing the risk of hospital-acquired infection thanks to an efficient ventilation system has increased the number of mechanical ventilation installed. Nowadays, electronics industry is not focused only on the aspect of effective and safe supply of power to a hospital facility. Correct conduct of medical procedures is also supported by advanced information technology systems that enable the flow of information from the research process, allow staff to communicate through extended call systems and ensure safety for patients through camera-based monitoring systems. The hospital building structure also consists of built-in medical installations, such as medical gas supply systems and pneumatic tube mail systems. Multilayer infrastructure of the medical facility together with the development of the industry related to the production of equipment supporting staff in diagnostic processes. Magnetic resonance imaging, tomography and medical robots used in surgery are already standard in medical equipment. Modern hospital facilities are buildings with the highest degree of equipment in advanced technologies which brings their architecture even closer to the image of an advanced medical machine system. Innovativeness of the equipment undoubtedly facilitates and refines the medical services, but at the same time, through its automatic impersonality, causes the increase of stress among patients.

An additional aspect that pushes the aesthetics of medical facilities into the background is the biomedical model still prevailing in medical communities, which is the continuation of Cartesian dualism (the separation of the soul from the body). This view transferred to trends creating the architecture of medical facilities, favours defining the hospital as an environment that is first of all safe for the physical health of its users. The impact of the traditionally created hospital space on the perceptions of its users is still not a widespread issue.

2. Therapeutic role of medical space

The spatial formula of the hospital in the 21st century has deviated from the ideas characteristic for the previous two centuries. The architecture of medical facilities is still constructed largely under the guidelines that ensure safe and effective medical procedures, however in the design practice there is also a place for a holistic approach that has been established in medical science. Over the past two decades the contemporary consideration of the importance of biological, social and psychological dimensions of human life has resulted in a growing trend of humanisation in hospitals. This perspective has opened the way to incorporating in design various aspects of medical space that take into account the role of physical, social and symbolic environments in the healing process [2]. As the healthcare world has begun to make a transition from the model of concentration on treatment process and illness towards the model of subjective wellness, there is a growing need for human-centred design propositions taking into account not only reactive resolutions of prevention but proactive ones, aiming at improvement of emotional well-being, promotion of health and relaxation [3]. It is expressed in the concepts of healthy environment promoting active life and healing environment defined as a treatment setting that sustains the healing process by creating a supportive physical and social environment. Such environments intend to promote a sense of well-being, a reduction in stress and fatigue, and encourage a sense of hope and positive attitude in patients.
The key to the humanistic approach is the concept of well-being understood as an optimal experience and psychological functioning, the ability to adapt to existing conditions, allowing for self-realisation regardless of specific limitations. This perspective is derived from the salutogenic approach in medicine that departs from the observation of the role of ubiquitous stress in human life and searches for natural restorative remedies. As a result of studies analysing how people manage to cope with stress without compromising their psychosocial functioning and their health, the attention has been drawn to the broadly understood human and environmental resources that make it possible for people to cope with dangers. These resources are compared to behavioural immunology, i.e. the behaviour or characteristics of the individual and its environment, which are immune to stress. The salutogenesis assumes that 'health' or emotional, mental and somatic well-being can be sustained by the dynamic ability to adapt to the changing circumstances of life. The origins of resilience are seen in such resources as comprehensibility, manageability and meaningfulness helping to resist the entropy of illness.

Another key concept associated with the relation between built environment and human being is the attention restoration theory introduced by Kaplan and Kaplan [4] who elaborate on the significance of lowering the cognitive burden of overstimulation and releasing the directed attention focused on a given task while activating the involuntary, effortless attention necessary for rest and regeneration. The possibility for attention restoration is associated with those elements of natural environment that are characterised by such a range and intensity of sounds and colours that are remote from ordinary tasks aura. According to the attention restoration theory, the physiological manifestations, such as blood pressure and heart rate, indicate a lower stress under the conditions where the patient is not exposed to direct contact with a highly stimulating factors [5]. The positive distraction theory [6] indicates the potential of human environment to divert attention from the negative aspects of medical settings to more regenerative elements of the non-hospital world. Therefore, the patients staying in hospital for long-term recovery benefit from more stimulating environment encouraging to activities and effort. Any positive distraction can elicit positive feelings, hold attention and interest and, therefore, reduce stressful thoughts. Contrary to healing environments, a standard treatment setting is regarded as one that lacks any positive distraction and may cause patients to focus increasingly on their own worries, fears or pain what can increase the perception of these emotions, and in turn increase levels of stress.

The research on the impact of medical environments on patients’ physical and mental state aims at establishing design requirements for healing environments and focuses on two issues: distinguishing main stressors to reduce their influence, and on the other hand, strengthening those elements of physical and social environment that foster well-being. In this perspective art is seen as an aesthetic factor that is beneficial for promoting health and essential for enhancing well-being in hospital environment.

3. Visual art as medication – research review

The approach of incorporating in design the results of careful observations of patients' well-being in various hospital environments, opened a new perspective for the evidence-based design in healthcare. It aims at the improvement of various aspects of healthcare environment in order to increase the treatment effects. The examination of healing capacity of non-medical elements and activities brought into attention the therapeutic aspects of artistic interventions in healthcare. A series of analyses and scientific research demonstrated effectively the positive outcomes resulting from the incorporation of artistic performances and activities into healthcare experience and visual art implementation in medical settings. The arts create a safe and supportive environment, improve the physical health and the well-being of patients, their relatives and medical staff [7-9]. Artistic interventions may include various dimensions of arts, however this article will focus on the most popular type: the visual art.

The experiment developed by the scientific team of Roger S. Ulrich was the pioneering research on the impact of environmental features on patients’ well-being and recovery time. The results from the Pennsylvania Hospital’s study showed that the postoperative patients recovered in a different way and over various periods of time depending on the conditions of rooms where they stayed: whether they were hospitalised in the rooms overlooking the park or the hospital walls. An interesting tendency was observed. The hospitalisation was shortened in the case of those patients who were allowed to stay in
constant visual contact with the nature outside [10]. Subsequent studies have shown that the quality of hospital environment can cause anxiety in patients leading to an increase of blood pressure and lowering patients’ immune system. The prolonged hospitalisation is generally associated with the reduction of the effectiveness of medical procedures resulting in the increased doses of medication [11].

In 1993 Ulrich analysed the reactions of patients in convalescence after open-heart surgery to room arrangements enriched with an image depicting a natural landscape or graphic design with an abstract pattern. The results indicated the role of sustaining visual contact with natural landscapes – that factor had an impact on mood improvement on the surveyed persons. The patients who stayed in rooms with abstract pictures experienced more anxiety than those who were in rooms without any landscape pictures. The positive impact of landscape paintings and photographs was later confirmed by studies carried out by other research teams. Some studies indicated the increased tolerance to pain thresholds when the research participants were able to observe video displays emitting noiseless images of nature. The results were definitely more positive than in the case of hanging a blind screen situated in front of an observer [7]. Other studies concerned visual art represented in the form of nature scene murals placed at the bedside. The images were supported by a recording of nature sounds present during the whole procedure of flexible bronchoscopy [12]. The distraction therapy with nature sights and sounds significantly reduces pain in patients undergoing medical procedures. Although the precise mechanism behind this beneficial effect requires further investigations, clinicians are currently advised to consider introducing this nonintrusive strategy to standard analgesic medications in patients undergoing painful, invasive procedures.

The impact of visual interventions (art and non-art) in hospital settings has become an important issue in public health domain focusing on increasing the quality and effectiveness of medical care. However, many studies concentrate on limited experimental groups related to specific medical departments. Certain studies focus on patients’ and visitors’ behaviour in specific functional areas within hospital buildings, for example reception and admittance areas. Research on waiting experience has shown that the perception of waiting time – especially in stressful situations - is significantly influenced by affective states. The positive impact of art helps to diminish stress reactions as it was observed in research on visitors’ behaviour in emergency departments comparing standard environmental conditions with the situation when a positive distraction (still and video art) was installed [13]. When video art was present, there was a reduction in restlessness and noise level, and a significant increase in social interaction was observed accompanied by a significant decrease in the number of queries made at the reception desk [13]. There is a substantial evidence that art depicting nature reduces stress levels and anxiety impacting waiting experience. Studies show that the attractiveness of physical environment in waiting areas - enhanced by art - is significantly associated with higher perceived quality of care, less anxiety, and higher reported positive interactions with staff. It is underlined that the perception of waiting time is a better indicator of patient satisfaction than actual waiting time, and that the waiting environment contributes to the perception of wait time [14]. Similar results concerning positive distraction’s impact on patients’ functioning was reported in the case of children who were observed in waiting areas of two paediatric clinics. The waiting area of the dental and cardiac clinics of a major paediatric care centre was enriched by a single plasma screen art intervention and the attention, behaviour, and activities of children were recorded [14]. The study revealed that the introduction of distraction conditions was associated with more calm behaviour and less movement, suggesting that significant calming effects are associated with the positive distraction conditions.

Hathorn and Nanda [15] underline the need for considering three important aspects of introducing art objects into healing environments. The first is the location of artwork - an adequate place and control of most effective outcome in enhancing the physical environment to develop a healing atmosphere. The second aspect associated with art objects in healthcare environments highlights the need for careful evaluation of unique needs of special patients as art receivers (e.g. distinguishing differences in art requirements for pediatrics and for palliative care). The third factor is linked to the role of demographics in healing environment. Such issues as gender, age and culture are to be considered when deciding on choice of art objects and exposition contexts. Ulrich and Gilpin [16] have developed the
general guidelines for appropriate art contents in healthcare settings [as in: 15]. They have included: waterscapes (calm water), landscapes (visual depth or open foreground, trees with broad canopy, savannah landscapes, vegetation, positive cultural artifacts (like old, warm houses), plants (fresh familiar gardens with open foreground), and figurative art of positive resonance (emotionally positive faces).

Art in medical settings creates opportunity for enhancing the sense of control required to maintain the notion of personal coherence through the manageability. The art programs developed in hospitals in Calgary enable long-term care patients to decorate their hospital rooms with art prints of their choice. The research data suggest that the simple act of exposing pictures or paintings of individual preference helps to add a personal touch to the sterile hospital environment and successfully facilitates interactions between staff and patients. The possibility of choosing a piece of art helps patients to regain a sense of control, essential for enhancing the process of healing. The supportive healthcare environment via art and its aesthetic component helps to improve patients’ mood and evokes good memories, allowing to shift patients’ attention away from their illness [17]. Art is also a key environmental attribute for children’s hospital experience, essential for supporting children’s capacity to maintain a positive approach to therapeutic process and its outcome. Art allows for establishing a rich source of aesthetic context, distraction and entertainment, provides vibrant resource of colour inspiration and reminds of everyday non-medical environment [18].

Art in hospitals is generally viewed positively by both patients and staff, but effects may differ due to the psychological responses to colour: its hue, brightness and saturation. It is indicated that the colours that elicit high levels of pleasure with low levels of arousal are most likely to induce a state of calm, while those causing high levels of arousal may provoke anxiety [9]. Several studies on the impact of colour on different factors associated with well-being indicate a shared conclusion that colour impacts healthcare outcomes by reducing stress and enhancing the sense of well-being, improving patients’ sleep and reducing length of stay, helping to overcome user’s spatial disorientation and diminish medical errors. It also increases patient satisfaction, as well as staff morale and productivity [19]. Park [20; as in: 21, p. 10] has conducted studies on the differentiation of colour preferences in the population of healthy and sick children. Hypotheses regarding the differentiation of preferences based on age and stage of disease have not been confirmed, but there is a high degree of reluctance to the application of white in medical spaces. Other studies [21] show that children choose less vivid colours for hospital environment than it was previously assumed in intuitively established colour-codes foreseen for paediatric facilities. The most popular colour scheme among the surveyed children was the combination of blue and green, and the monochrome application of warm blue, pastel green, as well as bright hues of warm yellow and orange. Some researchers [9] believe that patients’ preferences related to the mapping of natural landscapes are associated with the parallel choice of blue and green over yellow and red in medical interior arrangements. The results of research on the application of colours in hospital facilities are implemented in design practice. However, to avoid generalisations about perception and mood affects, colour has to be observed and analysed in different contextual applications.

Hospital experience as well as detrimental consequences of any illness itself affect patient’s psyche throughout the whole period of hospitalisation, and the intensity of healthcare environment’s impact on the recovery process increases with the length of stay. Over time, in addition to anxiety states, it is often observed the increase of feeling of isolation from the outside world, passivity and boredom. Every activity unrelated to the treatment process becomes meaningful: it improves psychophysical conditions of patients. Any creative activity may improve their mood: it allows patients to define their feelings helping hospital staff to gain a better insight into patients’ needs. It has been noted that concerts, theatre, performances, dances strengthen social bonds, improve relationships between patients and doctors, and allow patients to detach themselves from the medical environment [22]. Most hospitals in the United States have art programs developed as an integral part of the treatment process [15, 23]. Similar art initiatives are established in many NHS hospitals in the United Kingdom [24].
Medical therapy with art is defined by the use of art expression and imagination by physically ill people, those experiencing body damages or who are in progress of aggressive treatment, such as surgery or chemotherapy [25]. The first therapeutic procedures incorporating creation of visual forms focused solely on analysis and interpretation of underlying meanings projected on artworks. Currently art therapy practice aims at creating space for various forms of expression in specially prepared rooms allowing for positive distraction, expression of emotions and treatment experience, education by art and psychotherapy by art. Scientific research confirms that art therapy is helpful in healing process: it improves cognitive and physical functioning of patients with dementia, fosters recovery of patients with posttraumatic stress disorder. It improves well-being of patients in palliative and oncological care, and also supports clinical work with patients with mental disorders [26]. In the U.K. there is currently a number of projects operating that offer Arts on Prescription designed for people with mental health problems and experiencing social isolation aiming at helping people in their recovery through creativity and increasing their social engagement [27].

4. The redefinition of medical space through visual art
The term of ‘closed healthcare facility’ used in the Polish legislation for several years relates directly to the hermetic nature of spatial layout of medical facility. The hierarchy of rooms composed according to the degree of epidemiological threat enforces the use of a system of locking and shutting off specific sets of spaces in inaccessible hospital units. For patients, this means a physical separation from the outside world, their relatives and everyday environment. Therefore, in historical hospital buildings artworks managed to appear not in the context of strictly medical interiors, but merely as a decoration of few special places like a chapel. Further implementation of artistic interventions in hospitals was possible due to continuous transformations in the perception of contemporary hospital redefining medical space as such. Nowadays it is possible to observe several forms of art incorporation and their impact on medical space in contemporary hospital.

**Corridors as galleries.** The search for effective interior design of hospitals providing safety and above all aiming at positive impact on patient well-being has led to the introduction of regular art exhibitions to medical facilities. The decoration of rooms with the lowest risk of hospital infection (waiting rooms, communication) is the most common solution. The graphics - initially intuitively chosen by staff – enriches and diversifies the sterile character of hospital. With the development of evidence-based research on the impact of medical environment on patient well-being, much more attention and consideration was given to the selection of artworks implemented in similar settings. The involvement of private foundations made it possible to convert corridors of some hospitals into real galleries with art collections more interesting than many popular art galleries. This observation particularly applies to US medical facilities. The collections of hundreds of exhibits have been gathered for example by the Johns Hopkins Hospital and the Stanford Health Care. Paintings, sculptures and multimedia installations are individually selected by special committees, which use scientific studies on effects of different space arrangements on well-being of patients to compose a given art collection. The Stobhill Hospital in Scotland is a good example of this practice.

**Creative design of medical installations and interiors.** The positive reception of the idea of exhibiting art in medical space has led to expansion of artworks in healthcare context and has begun the search for design solutions incorporating artistic installations in areas where medical procedures are directly provided. The consultation rooms, doctors’ offices and patients’ rooms are more difficult to organise according to creative design as high hygienic and sanitary requirements have to be applied there. In this type of rooms, the implantation of art must take place under special supervision. Consequently, special finishes and construction of partitions are used and designed featuring graphics designed by artists who are aware of specific recipients they are creating for. Walls and ceilings are equipped with screens that emit images intended to calm patients during medical procedures. For example to provide a calming and comforting environment for patients attending radiation therapy treatment the computed tomography (CT) room and radiation therapy bunkers were designed to incorporate ceiling art that replicates a number of different visual scenes. The ceiling artwork
contributed positively to patients' experience during radiation therapy treatment [28]. Beukeboom et al. [29] has found that the more aesthetic the patient room is, the lower is the stress level of persons participating in medical procedures there. Much attention is also paid to hiding the medical infrastructure. Installations and equipment are hidden behind special panels and taken out only when required. Therefore, patients are not exposed to the view of automated equipment of consultation and examination rooms. This kind of arrangement was proposed by the British artist Morag Myerscough at Sheffield Children's Hospital. The colourful composition of wall panels covered the medical devices and the visual form as well as the final result delivered was consulted with doctors and patients [30].

**Aesthetic dimension of medical equipment design.** Cooperation of artists with medical space designers also involves work on the external appearance of medical equipment. Modification in design starts with furnishing the waiting room. Hospitals receive dedicated chair, table and shelf designs. Nevertheless, the design directions that change the external form of advanced diagnostic devices, such as MRI and tomography machines are more important. The enclosure of the instruments features friendly colours and shapes. The external design of the devices is specifically important in the case of units installed in children’s hospitals. Here, the creation inspired with designs acquired from the world of fairy tales can significantly simplify the examination. Doug Dietz, designer of medical instruments realised this fact after he observed a hysterical reaction of a child that was awaiting MRI examination. He decided to redesign the internal shape of the device. New equipment received a graphical design that can be associated with tropical jungle, space or deep sea. The result of the work was well-received by children and the medical personnel. The new graphical design of machines contributed to reduced number of anaesthesiology treatments prior to advanced image diagnostic examinations [31].

**Art as a magnet in public space.** The role of art in medical facilities may be more than a therapeutic one; it may also function as a cultural resource for the surrounding community [32] allowing for the perception of hospital’s public space as the place of social interactions and exchange. It is possible due to the humanistic perspective adapted to healthcare that increases the quality and quantity of easily accessible public space in hospital environment what nowadays can be seen as an added and synergic value: it helps to transcend the division between the hospital and the city [33]. According to the current WHO guidelines the contemporary hospital is supposed to be also a place of social life providing access to civil rights, enabling citizens to obtain information, confidentiality and privacy [34]. The social dimension of urban life entering the hospital is seen as a positive and enriching value because it forces healthcare designers to think about the livability and attractiveness of medical space and future social interactions.

In order to reduce the sense of isolation in medical facilities, the most accessible hospital zones have been reformulated. In the entrance area where there are usually the reception and waiting zone, the interior design follows the rules generally applied for urban public space. One of the most popular spatial solutions related to this trend is the arrangement of an inner court, atrium or a wide lobby in hospital buildings. These spaces are reminiscent of city squares, both in terms of the scale and variety of functions located there. The spaces and facilities on the ground floor of hospital atrium often exceed the standard services related strictly to medical specialisation. Next to registration and information desks, waiting rooms and hospital administration rooms, one can find also shops, refreshments and services specific to retail outlets in large supermarkets. As a prototype for this kind of medical unit, the literature points at the building of the Hospital for Sick Children's in Toronto [35]. A similar approach was taken in the process of transformations inside the St. Family’s Hospital in Warsaw where two courtyard spaces create a central reference point in the building topography. Users travel to all hospital wards located on upper floors via lifts located in the courtyards. It is a place for meetings and playing (for kids). It contains small service units (shop and cafe), as well as a chapel and offices for admissions. Large hospital atrium may resemble cultural buildings of general interest involved in promotion of culture and citizenship, organisation of performances, exhibitions and cultural events. Exhibiting sculptural installations temporarily diverting patients’ minds from their medical procedures is especially useful in children's hospitals. For example in the Evelina Children's Hospital the grand entrance lobby is used for exhibitions of art, theatrical and musical performances.
Artistic installations as landmarks. Artistic collections at hospitals also improve spatial orientation in the facility what contributes to resolving problems related to clarity of communication arrangements of large-size medical facilities. Despite gradual departure from a modernistic model of hospital architecture, the corridor layout is still the dominating solution. Long tracts unified in a monumental building design often impact the sense of orientation in people looking for a particular area. A method for clarifying the spatial arrangement is the usage of spatial installations as landscape reference points and design of visual information systems. This is used to accent the significance of shaping characteristic interiors that one can be identified with and located in a well-thought-out way, to make navigation and orientation easier.

Based on colour and graphic differentiation of particular hospital units, it may be easier for the patient to find them. Wayfinding System is created by planning orientation points. Its use simplifies communication, increases mental comfort of users, saves time of patients and staff and increases the aesthetical values of interiors [36]. An interesting sample of visual communication that allows for orientation in space and learning the building topography is a graphical system functioning as a visual graphic code designed for the Children’s Daytime Oncology and Hematology Center at Vall d’Hebron University Hospital in Barcelona. Three different spaces were defined: the natural environment in the waiting room (designed for three different publics: child, teenagers and parents), the universe – this aesthetics was applied to the area of medical consultations, and the racing circuit (the visual vocabulary specified for the boxes and treatment area). Another example of such a solution is the Evelina London Children's Hospital, where every storey and medical profile related to it, is arranged with the use of various natural environments, e.g.: the beach, mountains, forest, savanna. This multi-storey building is organised around a central, spacious and patient-friendly atrium equipped with furniture adjusted to the needs of parents and children. Artistic spatial installations are parts of a designer playground while being a characteristic element of spatial identity.

Art as a tool for promoting medical facilities. The attempts of transforming the spatial arrangement of hospitals are also supported by portraying medicine as a service that functions on a competitive consumer market. In this perspective, popularisation of medical services is based on marketing activities aiming at effective sales among clients. At medical facilities, a patient is approached from a marketing point of view, as a client. The services are adjusted to the client’s needs [37]. The quality of medical procedures as well as the space where they are performed are promoted. Hospital facilities obtain an attractive formula to draw attention of the biggest group of clients/patients. Designers’ decisions are not only indicated by technological guidelines but also by instructions developed by marketing specialists. Due to the above, high quality architecture is accompanied by design solutions reserved previously only for hotel and office buildings. The aesthetics that reduces the sense of visitors’ longing to be home are used here. Hospital interiors, thanks to implantaing art, acquire the atmosphere of elegant spaces characteristic for public buildings associated with comfort. This reduces the sense of being isolated from the environment beyond the hospital, while the spaces invite patients to use functions that are not related to the treatment process.

5. Conclusions
When analysing examples of the latest hospital projects, one can assume that art as an artistic process has been permanently incorporated into design of medical facilities. Today’s design tendencies relating to medical architecture have indicated a priority which is the therapeutic potential of a patient-friendly space. The technological development of construction materials and medical equipment created new possibilities of art being present in an environment that requires high sanitary and hygiene control. White colour is no longer a symbol of design of a hospital room. Hospital devices do not have to be terrifying. Holistic approach to the treatment process allows to portray the user of hospital space from a more humanitarian perspective.

Research on the impact of space arrangement on a hospital user is still in its initial phase. It has only been conducted on a small group of recipients. This screening character makes it impossible to draw general conclusions relating to the guidelines to which medical space design should correspond, so that
it has a positive effect on the patient and supports the medical procedures. The seminar series on arts, health and wellbeing [24] highlighted the need for further work searching at the underlying components of the artistic interventions themselves, to build a more nuanced understanding of arts-based interventions and a stronger theoretical base.

Activating artistic installations in hospital interiors and therapeutic interventions based on art requires research to be completed and dedicated to this issue, taking into account the specifics of hospital users, since the current state of knowledge makes it impossible to create a standard model or a universal instruction. Differences in hospitalisation history may impact the varied reception of art which was partially confirmed by the research completed by Professor Ulrich, quoted in the article. Improperly chosen display of art may have a negative impact on the patient equally as its absence. This is why one should carefully approach the attempt of intuitive art design of interiors without scientific support. Similarly, it is not recommended to create universal design standards without taking into account the patient specifics, disease history or cultural conditions.

It is worth to follow activities applied in the health care system in countries that decided to shape each medical facility individually. A good example is the design practiced in England that concerns development of hospitals based on dedicated scientific analyses. This phenomenon known as Evidence-Based Design has contributed to creating medical units that are patient-friendly not only through the quality of services offered. The success of many facilities also depends on integrating art in medical space which is possible thanks to activeness of private foundations financing implantation of art in hospital rooms. In Sweden, 1% of general costs allocated for building hospitals is assigned to artistic installations. A special organisational unit supervises the purchase and location of artistic objects.

Despite success in research proving a positive impact of art existence in hospital interior design on the mood of patients, this practice is still rarely applied. Single hospital projects using artistic installations, despite their success in reception by the society, did not contribute to global popularisation of this trend. There is research that attempts to measure the business benefits of implementing art in medical interiors, but a limited pace of popularising the tendencies discussed in the article is observed. Involving large funds into implanting art into hospitals is a barrier that seems to stop countries that face financial and organisational problems in public healthcare.

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