The relationship between the humanization of inpatient areas and the satisfaction and perceived affective qualities of hospital users

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“It may seem a strange principle to enunciate as the very first requirement in a hospital is that it should do the sick no harm”

Florence Nightingale

(Notes on hospitals, 1859)
SHIFTING FROM “INHUMAN” TO “HUMAN” SETTINGS

Why most people have a negative and inhuman image of healthcare settings?

...focus on medical technology and neglect the issue of “quality of life”

Places can affect people’s health:

- well-being vs. distress

- conveying positive vs. negative information for self-esteem, security and identity (Evans & McCoy, 1998)
What is Hospital Humanization?

- “Humanization” as a multi-dimensional construct

- Which facets? (Spinelli, 1994)
  - organizational
  - relational
  - therapeutic
  - spatial-physical

- Spatio-physical humanization: from “egocentric” to “user-centered” design (Bonnes & Secchiaroli, 1995)
User-centered or Patient-centered Design: focus on users’ needs and expectancies for “humanizing” (Shumaker & Pequegnat, 1989) or rendering “more humane” (Nagasawa, 2000) hospital environments.

Need for a “good” design in order to:

a) reduce the stress level of the various users (patients, staff, visitors, etc.)

b) promote and increase users’ well being and place experience

c) provide a “positive context” and a “supportive environment” which is “salutogenic” (Schweitzer et al., 2004)
**Users’ needs**

- “More humane hospital environments” (Nagasawa, 2000): spatial, physical and functional design attributes that should satisfy users’ needs

- Which users’ needs to satisfy?...(Evans & McCoy, 1998)
  - clear affordance
  - control over space
  - restorativeness
  - coherence and legibility
  - spatial and sensorial comfort
  - privacy
  - social interaction
  - safety (Ulrich et al., 2008)
DESIGN ATTRIBUTES THAT COUNT

- Which design attributes?....

- light
- colors
- materials
- furniture
- lay-out
- views
- orienteering

(Pressly & Heesacker, 2001; Del Nord, 2009)
Different and somewhat conflictual needs of the different kinds of hospital users: patients, staff, and visitors

Diverse users differ for their transaction with the hospital environment in terms of:
- role
- familiarity with the context
- temporal aspects of place experience

(Shumaker & Pequegnat, 1989)
OBJECTIVES

- Provide empirical evidence that environmental humanization affects positively hospital users, in order to convince “skeptical” stakeholders (staff, hospital managers, administrators, politicians, etc.) to care and invest for that (“research for justification”: Becker et al., 2010)

- Verify the congruence between expert and lay evaluation

- Verify similarities and differences among the diverse users of the hospital environment, i.e. patients, visitors and staff
HYPOTHESES

1) The higher the degree of Spatio-physical Humanization (SH), the higher the Satisfaction toward the hospital unit (S)

2) The higher the degree of Spatio-physical Humanization (SH), the higher the scores of positive Perceived Affective Qualities (PAQs)

3) Staff members score lower in Satisfaction toward the hospital unit (S)

4) Staff members score higher in the “active” affective qualities (both positive and negative), whereas patients and visitors score higher in the “passive” affective qualities (both positive and negative)
PARTICIPANTS

- 2 Ss graduated in Architecture as “design experts”
- 233 Ss contacted in 3 General Surgery Units located in 3 different hospitals of the city of Cagliari (Italy)

Hospital unit: 88 Ss in the low-humanized unit, 75 in the medium-humanized unit, 70 in the high-humanized unit

Kind of User: 120 patients, 74 visitors, 39 operators

Gender: 117 females, 116 males

Age: 46 18/30 years, 58 31/40 years, 68 41/50 years, 30 51/60 years, 31 over 60 years

Education: 17 Primary School, 73 Junior High School, 107 Senior High School, 36 Degree
High Humanization

Medium Humanization

Low Humanization

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LOW-HUMANIZED HOSPITAL UNITS

Haemodynamics

Urology

-Fig. 4- Interno del reparto di Emodinamica.

-Fig. 6- Interno del reparto di Urologia.

-Fig. 5- Sala di attesa del reparto di Emodinamica

-Fig. 7- Zona degenza del reparto di Urologia.
HIGH-HUMANIZED HOSPITAL UNITS

Cardiology

Oncology

- Fig. 8 - Interno del reparto di Cardiologia Riabilitativa
- Fig. 9 - Zona degenza del reparto di Cardiologia Riabilitativa.
- Fig. 10 - Interno del reparto di Oncologia Medica.
- Fig. 11 - Sala di attesa del reparto di Oncologia Medica.
TOOLS AND MEASURES

- **Measure of spatio-physical Humanization (H)**
  Expert evaluation grid: 96 parameters of spatio-physical humanization of hospitals
  *5-step Likert scale of response*

- **Measure of Perceived Affective Qualities (PAQs)**
  Scale of Perceived Affective Qualities of Places (Russell et al., 1981): list of 48 adjectives included in 4 bi-dimensional axes
  *7-step Likert scale of response*

- **Measure of Satisfaction toward the hospital unit (S)**
  3 items
  *5-step Likert scale of response*
DATA ANALYSES

- Principal Component Analyses of scales and Cronbach's Alpha for each component
- 3X3 Factorial ANOVAs for independent measures
  (post-hoc comparisons: Bonferroni Alpha)

Design Factors:
H1 & H2: spatio-physical Humanization (H)
H3 & H4: typology of User (U)

Measures:
H1 & H3: Satisfaction toward the hospital unit (S)
H2 & H4: Perceived Affective Qualities (PAQs)

controlling for Gender, Age, & Scholarship
**DIMENSIONALITY AND RELIABILITY OF MEASURES**

- **PAQs**
  - Pleasant *vs.* Unpleasant: 12 items, $\alpha = .90$
  - Relaxing *vs.* Distressing: 12 items, $\alpha = .84$
  - Exciting *vs.* Gloomy: 12 items, $\alpha = .87$
  - Stimulating *vs.* Boring: 12 items, $\alpha = .81$

- **Satisfaction**: 3 items, $\alpha = .94$
H1 - **Humanization & Satisfaction**

![Bar chart](chart.png)

- **Satisfaction toward the hospital unit**

- **Hospital Humanization**
  - Low
  - Medium
  - High

- **Statistical Tests**
  - \( F_{(2,221)} = 39.52 \)
  - \( p < .001 \)
  - \( \eta^2 = .26 \)

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H2 - HUMANIZATION & PAQs DIMENSIONS

Perceived affective quality scores

- Pleasant vs. Unpleasant: $F_{(2,221)}=84.61$, $p<.001$, $\eta^2=.43$
- Relaxing vs. Distressing: $F_{(2,221)}=37.63$, $p<.001$, $\eta^2=.25$
- Exciting vs. Gloomy: $F_{(2,221)}=42.12$, $p<.001$, $\eta^2=.28$
- Stimulating vs. Boring: $F_{(2,221)}=23.34$, $p<.001$, $\eta^2=.17$

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H3 - Different Users' Satisfaction

\[ F_{(2,221)} = 3.63, \quad p < .05, \quad \eta^2 = .03 \]
H4 - Different Users’ PAQs

1.5
2
2.5
3
3.5
4
4.5
5
5.5
6
6.5
7

Perceived affective quality score

Pleasant vs. Unpleasant

Relaxing vs. Distressing

Exciting vs. Gloomy

Stimulating vs. Boring

F(2,221) = 8.49
p < .001
η² = .07

F(2,221) = 14.13
p < .001
η² = .11

F(2,221) = 20.23
p < .001
η² = .15

F(2,221) = 17.89
p < .001
η² = .14

Patients
Visitors
Staff

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Stimulating vs. Boring
2-way Interaction between Humanization & Users

\[ F_{(4,221)} = 2.91 \]
\[ p < .05 \]
\[ \eta^2 = .05 \]

Low Humanization | Medium Humanization | High Humanization

- **Patients**
- **Visitors**
- **Staff**
CONCLUSIONS

- **Spatio-phisical Humanization** confirms its role in influencing both satisfaction toward the hospital unit and the perception of affective qualities.

- **Staff members** confirm the attribution to the hospital environment of “activating” affective qualities, both negative (i.e., more Distressing) and positive (i.e., more Exciting and Stimulating).

- **Patients** and **Visitors** confirm the attribution to the hospital environment of “passive” affective qualities, both negative (i.e., more Gloomy and Boring) and positive (i.e., more Relaxing).

- **Visitors** appeared as the most unsatisfied group, maybe as a consequence of the poor attention toward their needs in the design process (Zimring et al., 1986).
Some references


Thank you!

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