Design Research and the Globalization of Healthcare Environments

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Global healthcare practice has expanded over the past 20 years.

Simultaneously, the incorporation of research into the design process has gained prominence as best practice.

Using research to support international practice result in more appropriate environments for individuals whose culture is unfamiliar to the designer.
Western medicine has been embraced, however, the Eastern perspective is supported by:

- rising importance of home- and community-based care,
- nature as a therapeutic modality,
- patient empowerment,
- need for socially equitable and sustainable environments,
- new paradigms re: therapeutically supportive care (Verderber, 2003).
One of the primary considerations for international healthcare design is culturally-based spatial behavior.

Proxemic behavior is “the study of microspace as a system of biocommunication” (Hall, 1963) and a measure of cultural behavior.
Introduction

In light of the need to provide research to designers, the authors of this study aimed to investigate the availability of design research across international settings.

How pervasive is healthcare design research outside of the US?
Design Research (DR)

- DR initiated in North America & Europe in 1980s.
- Similar to EB medicine, the purpose of DR is to use research to inform practice.
- Critical in the creation of healthcare facilities.
- DR can be used to expand awareness of cultural needs and inform design decisions.
Unfortunately, many research recommendations involve increased costs.

Research is directed at specific design solutions and may lose its focus on the original intention inhibiting less expensive options.

ROI is critical.
In most countries funds are not available to support all design recommendations.

Strategies in developing countries include:
- reduction of built area,
- simple/appropriate construction systems,
- modular design,
- daylighting and ventilation
- heavy-duty materials and
- efficient HVAC (Sherif, 1999).
Safety is not a binary concept of safe versus unsafe; it is an indicator of the degree of risk a culture will take based on socio-economic resources.

“EBD should be viewed as a process to optimize performance within cost, legal, cultural and operational boundaries” (Pati, n.d.).
Purpose

- We are likely overlooking critical publications.
- One of the purposes is to incite a response to inform us of our oversights and enable us to have a broader understanding of the status of health design research.
Methodology

- The authors reviewed the international literature on the design of healthcare facilities.

- Over 500 studies and conference proceedings were incorporated.
Methodology

Contacted prominent international researchers for their personal assessment of local health design research studies:

- China,
- Egypt,
- Germany,
- India,
- Iran,
- Israel,
- Singapore, and other countries.
Methodology

Five research assistants searched multiple databases using the following keywords:

- evidence-based design,
- design research,
- healthcare environment,
- spatial behavior,
- proxemics,
- design culture,
- salutogenic design, and
- related terms.
Team members and external experts were multi-national and included individuals who had knowledge of:

- English,
- Farsi,
- French,
- German,
- Hebrew,
- Italian,
- Mandarin,
- Portuguese, and
- Spanish.
Methodology

- Topics ranged from rooms to full blown urban environments.
- Methodologies varied from qualitative research on health behaviors to quantitative research on the environment and infection.
Methodology

- Included general design research literature, if the outcomes could be interpreted as applicable to healing environments.

- For example, most publications on culturally-based responses to the environment were considered to be useful to the design of healthcare settings.
A primary finding was that rigorous research is minimal outside of North America, Europe and Australia. In many regions publications are limited to project descriptions.
Results: Locations of Studies
Results: Ulrich 2008

Of 450+ citations (Ulrich et al. in 2008) 85% were in the US.
Results: Canada

Canadian topics included:
- ceiling lifts
- design for seniors
- ED efficiency
- effects of daylighting
- children’s hospital experiences
- operating room design
- role of nature
- safety
- sleep in hospital
- stress and wood
- ventilation and infection
Results: United States

United States. Studies in the US are too numerous to summarize here, and the reader is advised to consult other literature reviews (e.g., Ulrich et al., 2008).
Discussion: Results Summary

- Too few studies on cultural differences in environmental preference;
- Outcomes of studies from one country might not be culturally appropriate for another.
- Too few studies on healthcare environments in economically challenged countries;
- More fiscally stable countries may recommend environmental interventions that are not achievable.
In the absence of research, non-local designers must be more aware of cultural needs. Needs can be addressed in one of two ways:
Discussion: Cultural Competence

There are no models for increasing the competency of architects; Campinha-Bacote’s schemata for competent health service provides a framework.
Discussion: Economic Competence

- National economic status impacts healthcare environment infrastructure.
- Health expenditures parallel the prevalence of research and demonstrate the need in the developing world.
- Highest healthcare and research expenditures per capita take place where life expectancy is highest.

Source: CIA World Factbook
Discussion

- Designers in SE Asia, Africa and Central America focus on basic requirements - design research is a luxury.

- External researchers should seek funding in their country of origin and collaborate with international researchers.

- Design research must focus on specific design objectives rather than specific solutions.
Conclusion

- The audience is encouraged to contact the authors regarding the status of design research in their home countries.

- Progress toward creating the most appropriate healthcare environments is a global endeavor.