Familial Caregiving Architectural Provision in Nigerian Hospital Wards

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Outline of Presentation

- Research Purpose
  - Background
  - Problem Statement
  - Aim & Objectives

- Research Process
  - Research Methodology
  - Data Collection
  - Data Analysis

- Research Outcome
  - Findings
  - Design Implication
  - Contribution to Knowledge
Family and health

Apart from performing their primary responsibility, family represents a significant social context within which illness occurs and treated.

- Being a basic unit in healthcare interactions and transactions, families have been seen by several studies to play a significant role in care and treatment to a physically and mentally challenged member.

- It has been universally accepted that family provides their patients the emotional and psychological support required for restoration.

- Generally, family presence and participation in caring for their hospitalised ones has been found to:
  - Reduces stress
  - Improves clinical outcomes
  - Promotes restoration
The Nigerian Context

The extent of family involvement in Nigeria during hospitalisation differs

- Bedbath
- Assisting healthcare personnel
- Turning bedridden
- Cooking
- Feeding
- Vigilance
- Running errands
This un-invited family presence has rendered the ward spaces **inadequate**, activities and functions **negotiating spaces** they were not configured to accommodate.

- Rowdy and untidy hospital ward environment
- Uncoordinated sprawl
Familial caregiving and family needs in hospital setting

- Intensive care unit
- Psychiatric ward
- Paediatric units
- Dementia

McCabe, 2014
Abdelhadi and Drach-Zahavy, 2012
Cioffi, 2006
Fine, 2010
Kuo et al., 2012

Psychology

Chen and Feeley, 2014
Chike, 2012

Beaujot and Ravanera, 2008

Engineering

Heyland and Tranmer, 2001
Yau et al., 2010

Mourshed and Zhao, 2012
Khalaila, 2013

Nursing

Mitchel and Chaboyer, 2010

Cioffi, 2006
Fine, 2010

Kuo et al., 2012

Architectural innovations and family needs in hospital setting

Ventilation
Privacy
Impact of facilities
Safety
Sustainability
Flexibility
Innovations
The Big Picture:

In spite of the wide recognition of the positive effect of family presence and participation in a hospital setting on restoration, it appear as if

• There is no comprehensive design measure or framework that will evaluate the spatial needs of the patient family in hospital wards.

• There is scarce information that will guide the design process, especially in developing countries like Nigeria.
Aim and Objectives

| Aim | To propose a design framework that provides for familial care practices in Nigerian hospital ward setting with a view to informing design decision |
| Key Research Question | How can Nigerian hospital wards be configured to provide for familial caregiving? |

<table>
<thead>
<tr>
<th>Context</th>
<th>Synthesis</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Objectives</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>To Explore the <strong>significance</strong> of familial caregiving concept in Nigerian hospital Wards</td>
<td>To examine the <strong>implication</strong> of familial caregiving on hospital ward spaces.</td>
<td>To determine the <strong>design indicators</strong> of ward configuration with familial caregiving</td>
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<tr>
<td>Research Questions</td>
<td>Why is familial caregiving considered a necessity in Nigerian hospital wards?</td>
<td>How does the hospital ward spaces accommodate family care actions?</td>
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</table>
### Research Methodology

**Strategies of Data Collection** as directed by the research objectives

<table>
<thead>
<tr>
<th>Objectives</th>
<th>One</th>
<th>Two</th>
<th>Three</th>
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</thead>
<tbody>
<tr>
<td><strong>Focus</strong></td>
<td>Essence and Significance of Familial Caregiving</td>
<td>Design Implication</td>
<td>Design Indicators</td>
</tr>
<tr>
<td><strong>Methods</strong></td>
<td>Interview, Observation, Charrette session</td>
<td>Behavioural Mapping, Drawings</td>
<td>Synthesis</td>
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<tr>
<td><strong>Units of analysis</strong></td>
<td>14 patients, patient’s families, Male and female adult surgical wards, Architects, doctors, nurses, Health Assistants and NGO.</td>
<td>Patients and their families, Floor plans</td>
<td></td>
</tr>
<tr>
<td><strong>Parameters</strong></td>
<td>Significance, Family care actions and Interactions, Implication, Spatial usage patterns</td>
<td>Tangibility, Dimension and Formality</td>
<td></td>
</tr>
<tr>
<td><strong>Method</strong></td>
<td>Survey Questionnaire</td>
<td></td>
<td></td>
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<tr>
<td><strong>Units of analysis</strong></td>
<td>38 Resident doctors, 63 nurses, 33 health assistants and 48 patient’s family</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Parameters</strong></td>
<td>Familial caregiving, Culture and Poor hospital ward operations</td>
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</table>
## Methods of inquiry

<table>
<thead>
<tr>
<th>Methods of inquiry</th>
<th>Methods of analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Observation</td>
<td>Qualitative factor analysis (Classical content analysis, constant comparison analysis, Krueger framework analysis (Creswell, 2012; Denzin, 2001; Fram, 2013; Elo et al, 2014; Nayeri et al, 2013; Walliman, 2006; Rabiee, 2004))</td>
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<td>2. Interview</td>
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<td>3. Charrette Session</td>
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<td>4. Behavioural mapping</td>
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<td>5. Study of Architectural drawings</td>
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<tr>
<td>6. Survey questionnaire</td>
<td>Psychometric Analysis using AMOS (Confirmatory Factor Analysis) (Hoe, 2008)</td>
</tr>
</tbody>
</table>
Research Objective-1

Interview
- Cultural Etiquettes
- Poor Hospital ward operation

Observation
- Family solidarity

Charrette
- Scene
- Clinical Participation

Questionnaire

Results and Findings
Research Objective-2

Results and findings cont...

CAMP

Bedside

Open Spaces

Foyer/Corridor

4 Family Transaction Spaces
### Research Objective-3

**Magnitude**

Core family functions:
- Company
- Feeding
- Social interaction
- Movement
- Turning bedridden
- Bed bath
- Assigned tasks
- Vigilance
- Congregational prayer
- Individual prayer
- Cooking
- Laundering

**Design Indicators**

- **Dimension**
  - Spatial usage pattern
  - Camp
    - Cooking
    - Laundering
  - Bedside
    - Sitting
    - Sleeping
    - Storage
  - Foyer/Corridor
    - Standing
    - Sitting
    - Observing prayers
  - Open spaces
    - Sleeping
    - Sitting
    - Relaxation

- **Formality**
  - Spatial determinants

<table>
<thead>
<tr>
<th>Location</th>
<th>Activities Requiring Formal Setting</th>
<th>Activities not Requiring Formal Setting</th>
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</thead>
<tbody>
<tr>
<td>Ward Indoor</td>
<td>Family presence round the clock</td>
<td>Social Interaction</td>
</tr>
<tr>
<td></td>
<td>Storage of personal belongings</td>
<td>Reception</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Religious Attendances</td>
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<tr>
<td>Ward Outdoor</td>
<td>Laundering</td>
<td></td>
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<tr>
<td></td>
<td>Food Preparation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Social Interaction</td>
<td></td>
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</table>
Arriving at a desired architectural configuration of a family conscious hospital ward

**Functional Requirements**

- **Patient Personal**
  - Sleeping
  - Eating
  - Chatting
  - dressing
  - Receiving visitors
  - storage

- **Ancillary**
  - Admission
  - Bath
  - Socialisation
  - Toileting
  - Clerking
  - Sanitation
  - Pantry services

- **Clinical**
  - Admission
  - Treatment
  - Resuscitation
  - Teaching
  - Communication
  - Diagnostic
  - Physical examination

**Familial**

- Monitoring
- Accompanying
- Social interaction
- Food preparation
- Religious attendances
- Outing
- Feeding
- Laundering

**Spatial ordering**

- **BEDSIDE**
  - SLEEPING
  - SITTING

- **OUTDOOR**
  - RECREATION
  - FOOD PREPARATION
  - LAUNDERING

- **INDOOR**
  - STORAGE
  - SOCIAL INTERACTION
  - RELIGIOUS ATTENDANCES
This research work has established the need for a rethink in Nigerian hospital ward design and configuration.

It has also suggested a family conscious hospital ward setting that departs from the concept adopted from the British model of care and have consideration for the cultural background of Nigerian society.
This research establishes the significance of patient family as a component of hospital ward architectural provision.

The outcome of this study could provide a useful tool that will guide the future Nigerian hospital ward design.

The findings of this study that suggests departure of the hospital ward configuration from the conventional type will change the way hospital wards are seen by healthcare personnel, designers and hospital managers.


Thank You