Therapeutic Architecture: Mental & Behavioral Health Facilities

European Healthcare Design
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Naomi Sachs & Mardelle Shepley
Cornell University
2016 Data (SAMHSA & WHO)

- 44.7 million US adults experienced mental illness in the past year
  - 10.4 had a serious mental illness
- 35 million received mental health services
- 21 million 12+ needed substance abuse treatment
  - 3.8 million received substance treatment
State of Research

- Overall increased demand for mental health services
- Little research about MBH facility design
- Research-informed / evidence-based design (EBD) strategies open doors to dialogue and research
Literature Review: Phase 1

- 300+ article literature review (2013) supplemented by a follow-up review of 100+ publications and a book
- Results of review: 17 topics covering staff & patient needs
Purpose of Study

- Identify **design features** that critically impact staff and patients in MBH environments
- Develop a **tool** to evaluate MBH facilities
- Supported by the Academy of Architecture for Health Foundation
Research Team

- Cornell University
- architecture+
- Shepley Bulfinch
Student research assistants

- 2 Bachelors students
- 3 Masters students
- 1 PhD student
Methods Phase 1: Interviews

1. Interview and focus group method
2. How important were the topics and were they inclusive?
3. Interviewees identified via snowball sampling
Methods Phase 1: Interviews

4. Process initiated with 4 experts:
   a. 20+-/- years of experience as clinicians, design researchers or design practitioners
   b. published or produced MBH projects
5. After 4 iterations, representatives from each discipline identified
6. PI contacted potential interviewees by email/phone

Source: explorable.com
Methods Phase 1: Interviews

- Included 22 potential subjects from North America and Australia
- 19 responded and agreed to participate
  - 7 clinicians
  - 4 academics/researchers
  - 5 architects/designers
  - 1 researcher/practitioner
  - 2 administrators
Methods Phase 1: Interviews

- Interviews lasted 25-40 minutes
- Transcripts analyzed using grounded theory method described by Lincoln & Guba (1985)
Methods Phase 1: Interviews

- 761 notecards generated
- Cards sorted into common topic categories
- Second reviewer sorts cards independently to confirm consistency of the categorization
1. Deinstitutionalized
2. Orderly and organized
3. Well-maintained
4. Furnishings
5. Access to nature
6. Maximum daylight
7. Staff safety/security
8. Staff respite
9. Low density rooms
10. Social interaction/community
11. Mix of seating
12. Autonomy/spontaneity
13. Staff patient interaction
14. Nurse station
15. Indoor/outdoor therapy
16. Smoking rooms
17. Suicide resistant FFE

Quality of Methods

Relation to Topic

Frequency of Citation

Appropriate for Study

Exploration of Issues

Shared Definition
Results: 1. Deinstitutionalization

- Every interviewee considered deinstitutionalization/homelike a critical aspect of MBH setting
- However, definition of “homelike” unclear
  - Not everyone embraces the traditional vision of home; to some the notion may be disturbing
  - The essence of ‘home’ has more to do with feeling welcome and secure
Results: 1. Deinstitutionalization

A Veterans Administration staff member stated:

You’re dealing with a population that is probably 25% literally homeless, and at least another 25% are sort of homeless, like they’re living in somebody’s garage or their relative’s basement or some place that would hardly seem like home [to many of us].
Results: 2. Orderly & Organized

- Most interviewees expressed concern over the term “orderly and organized”
- Does not account for the comfortable “complexity” of activities in a psychiatric facility
Results: 3. Well-maintained Environment

- Nearly every interviewee strongly supported a well-maintained environment
- High-quality environments convey a sense of respect for patients
- Relationship between well-maintained environments and the incidence of property destruction
Results: 4. Damage-resistant & Attractive Furnishings

- Most interviewees believed damage-resistant furnishings are critical
- But difficult to find durable, non-institutional, reasonably priced furniture
Results: 5. Access To Nature

- All but one interviewee believed visual and physical access to nature was critical.
- One interviewee remarked that nature is important in ways “we may not even completely understand.”
- Another called access to nature “the next great frontier” in the design of mental health facilities.
Results: 6. Maximum Daylight

- Agreement that provision of extensive daylight is critical
- But “nobody is quite sure how to do it”
- Electrical lighting is an inadequate substitute
Results: 7. Staff Safety/Security

- Most interviewees felt that promoting staff safety is a priority and could be improved.
Results: 8. Staff Respite

- Most interviewees believed space for staff respite is an important issue.
- No consensus as to the exact nature and location of staff respite amenities.

Krueger Family Healing Garden
Photo: Therapeutic Landscapes Network
Results 9: Low Density Bedrooms

- Agreement that research is needed
- Private and/or semiprivate rooms preferred
- Private rooms recognized as increasing construction costs and inhibiting supervision
- Private bedrooms/bathrooms linked to patient diagnosis and acuity

Vermont Psychiatric Hospital, architecture+
Results 10 & 13: Patient Staff Interaction/Observation

- Most experts thought private areas for staff-patient interaction are essential.
- A recurring concern was the need for spaces that facilitate a variety of social activities.
Results: 11. Mix of Seating

- Nearly all interviewees felt that mix of seating arrangements are important to facilitate activities.
- Need variety of seating arrangements to support both one-on-one interactions or group therapy.
Results: 12. Autonomy & Spontaneity

- The importance of spaces conducive to autonomous and spontaneous behavior commonly acknowledged.
- Importance of environmental amenities such as computers or video games, and spaces such as kitchens.

Fountain House, Elskop Scholz Architecture
Results: 14. Nurse Station Configuration

- Nurse station design of great interest to all but one interviewee
- The debate between open and closed stations focuses on balancing needs for patient supervision and staff safety
Results: 15. Indoor/Outdoor Therapy

- All interviewees affirmed the importance of outdoor and indoor therapeutic spaces
- Examples of amenities that could be offered include supervised indoor swing, ping-pong table, stationary bicycle

Worcester Recovery Center, Ellenzweig with architecture+
Results: 16. Smoking Rooms

- Several interviewees stated accommodating smoking is not an important topic
- Nicotine substitutes are often provided and smoking is not allowed
- A minority of interviewees disagreed
Results: 17. Suicide Resistance

- Most participants felt the development of suicide-resistant equipment was critical, evolving.
- Few thought that it has already been thoroughly explored.
- Additional dialogue required in spite of availability of current guidelines.
<table>
<thead>
<tr>
<th>Topics Generated From Literature Review</th>
<th>% Interviewees Supporting Lit Review Topic for Survey</th>
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</thead>
<tbody>
<tr>
<td>Deinstitutionalized</td>
<td>100% (16/16)</td>
</tr>
<tr>
<td>Orderly/organized</td>
<td>87.5% (14/16)</td>
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<tr>
<td>Well-maintained</td>
<td>87.5% (14/16)</td>
</tr>
<tr>
<td>Damage resistant furniture</td>
<td>87.5% (14/16)</td>
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<tr>
<td>Visual/physical nature access</td>
<td>93.8% (15/16)</td>
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<td><strong>Maximum daylight</strong></td>
<td><strong>100% (17/17)</strong></td>
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<tr>
<td>Staff safety/security</td>
<td>70.6% (12/17)</td>
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<td>Staff support/respite</td>
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<td>Private/low density rooms</td>
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<td>Social interaction/community</td>
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<td>Mix of seating</td>
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<td>Autonomy &amp; spontaneity</td>
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<td>Patient-staff interaction</td>
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<td>Nurse station observation</td>
<td>94.1% (16/17)</td>
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<td><strong>Indoor &amp; outdoor therapy</strong></td>
<td><strong>100% (17/17)</strong></td>
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<td><strong>Smoking rooms</strong></td>
<td><strong>64.7% (11/17)</strong></td>
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<td>Suicide resistant furnishings</td>
<td>76.5% (13/17)</td>
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<td>Topics from Literature Review</td>
<td>Interview/Focus Topics</td>
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<td>Impact of unit size</td>
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Phase 2 (Pilot): Psychiatric Staff Environmental Design Survey (PSED) Survey

- 17 demographic, 63 Likert-style, 11 ranking, and two open-ended questions; built in Qualtrics
- 7-point scale “not important at all” to “extremely important; and “very ineffective” to “very effective”
- 20 minutes to complete
- 134 respondents
Phase 2: Method

- Psychiatric nurse organizations distributed survey via an online blog or membership letter
- One facility distributed the survey directly to staff via email
- Gift cards used as incentive
Phase 2: Variables

- Studied *importance and effectiveness* of environmental interventions (qualities and features) identified in Phase 1, and the relationship between the two.
- Additionally, explored strategies such as *private bedrooms and bathrooms* and *open vs closed nurse stations*.
Phase 2: Variables Explored

- **Environmental qualities**: Overarching conceptual design goals (i.e., autonomy and spontaneity)
  - **Environmental characteristics**: Aspects of the environment that contribute to the effectiveness of qualities (i.e., gardens and views of nature)
  - **Environmental features**: Specific physical interventions (i.e., access to the outdoors)
Phase 2: Hypothesis One Results

Psychiatric Staff Environmental Design (PSED) Research Tool

- The usefulness of the PSED tool was corroborated
- More facility information and clustering of topics needed
- Provides baseline to compare with patient responses
Phase 2: Hypothesis Two Results

Importance versus Effectiveness

- **Significant difference** between the perceived importance of desirable qualities and features and the degree to which they were present (effectiveness)
- Disconnect could have **negative consequences** on staff satisfaction, retention
Importance of environmental qualities & features: all settings

<table>
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<tr>
<th>Quality:</th>
<th>$M$</th>
<th>$SD$</th>
<th>Orderly</th>
<th>Homelike</th>
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<td>Homelike</td>
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Maintenance most important quality

Staff safety most important feature

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<thead>
<tr>
<th>Feature:</th>
<th>$M$</th>
<th>$SD$</th>
<th>Attr furnit</th>
<th>Staff resp</th>
<th>Resis furnit</th>
<th>Elec light</th>
<th>Conf furnit</th>
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Phase 3: Revised PSED/PPED Surveys

- Psychiatric Staff Environmental Design (PSED) Tool
- Psychiatric Patient Environmental Design (PPED) Tool
- Staff and Patient / Client feedback on importance and effectiveness of environmental qualities, features, and characteristics
- Rank / prioritize environmental qualities, features, characteristics
Phase 3: Methods

- 2 healthcare organizations (CA and NY)
- 3 facilities (2 in CA, 1 in NY)
- PSED administered online via Qualtrics at all 3 facilities
- PPED administered on paper at 2 CA facilities
Phase 3: Results

- 58 PPED (client) surveys
- 157 PSED (staff) surveys
- Differences between patients and staff
- Differences between staff in NY and staff in CA for “effectiveness” but not “importance”
- Some differences between “importance” and “effectiveness” among patients and staff
- Use qualitative data (write-in questions) to help explain quantitative
Phase 3: PPED Results

Qualities that Support Patients, Staff & Families

- Attractive/Aesthetic
- Deinstitutional/homelike
- Outdoor space/nature
- Orderly
- Well-maintained

Bar chart showing the importance and effectiveness of these qualities.
Phase 3: PPED Results

*Features* that Support Patients, Staff & Families

- Attractive furniture
- Comportable furniture
- Damage-resistant furniture
- Acoustical control
- Daylight
- Electric lighting
- Staff safety & security
- Staff respite

<table>
<thead>
<tr>
<th>Feature</th>
<th>Importance</th>
<th>Effective</th>
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<td>Comportable furniture</td>
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<td>Damage-resistant furniture</td>
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<td>Acoustical control</td>
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<td>Staff safety &amp; security</td>
<td>6</td>
<td>5</td>
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<tr>
<td>Staff respite</td>
<td>5</td>
<td>4</td>
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</tbody>
</table>

*Stars indicate high importance and effective features.*
Phase 3: PPED Results

Ranking of Characteristics for Deinstitutionalization

- Allow choice/control
- Support privacy
- Comfortable/cosy
- Convey respect
- Accommodating entry
- Artwork/décor
Phase 4: Future Research

1. Outcomes associated with private vs shared bedrooms
2. Frequency of incidents associated with open vs closed nurse stations is essential
3. Impact of noise and lighting
4. Impact of access to nature
5. Provision of staff respite areas
6. Physical environment of care in
   1. Forensic MBH facilities
   2. Jails, prisons, courthouses
      What do we know? What do we need to know?
References


