Therapeutic Architecture: Mental & Behavioral Health Facilities

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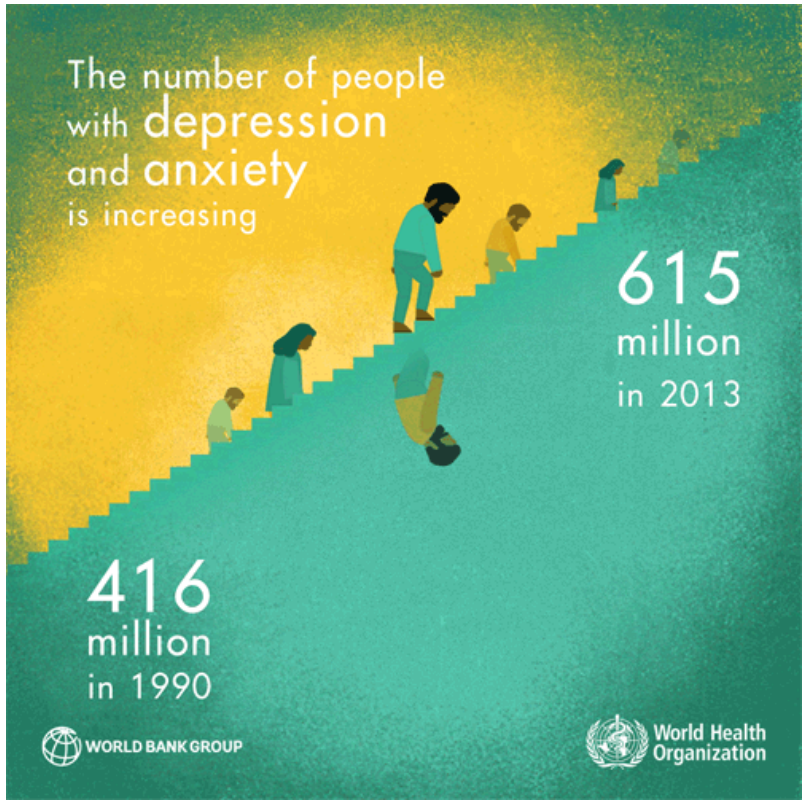
2016 Data (SAMHSA & WHO)

- 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

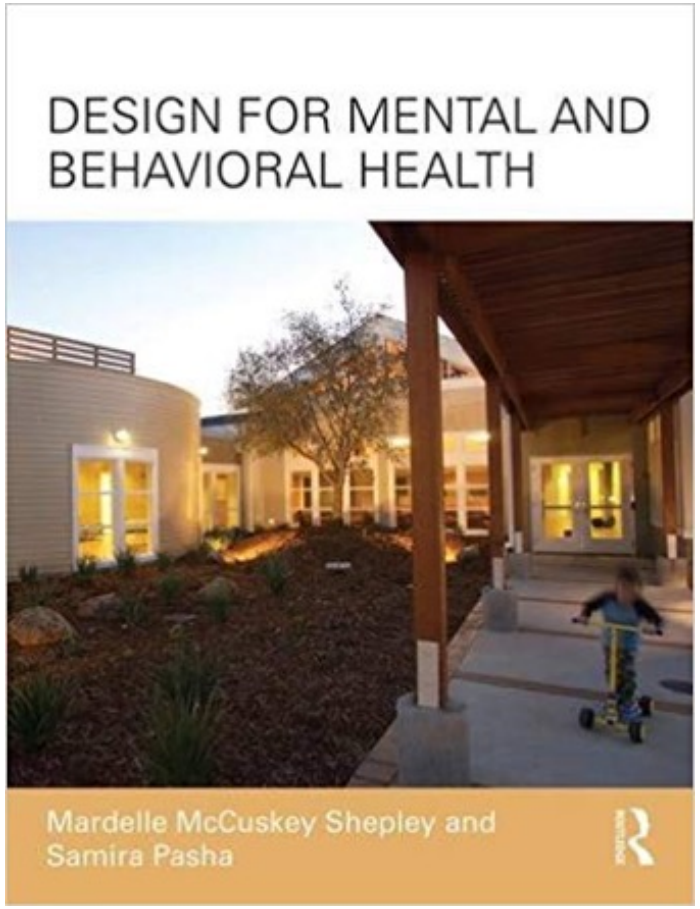


State of Research

- 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

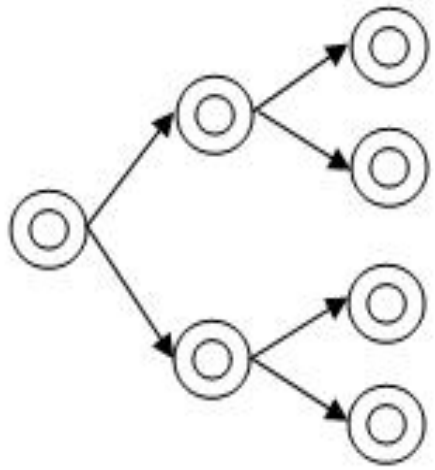
- 2 Bachelors students
- 3 Masters students
- 1 PhD student

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



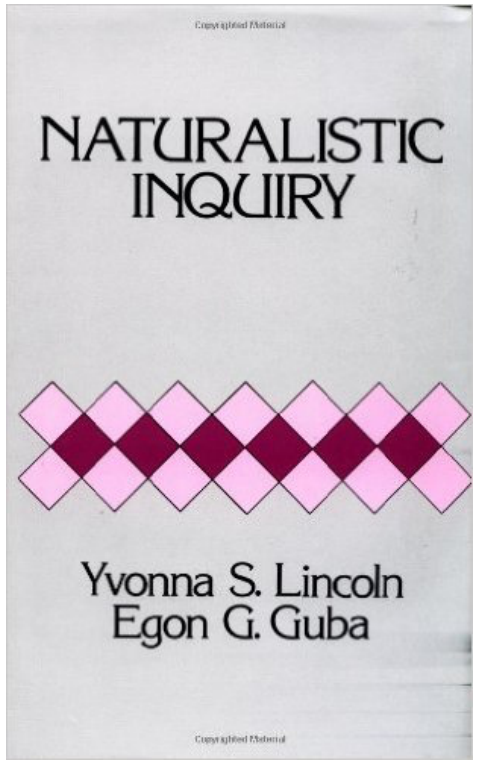
Source: explorable.com

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

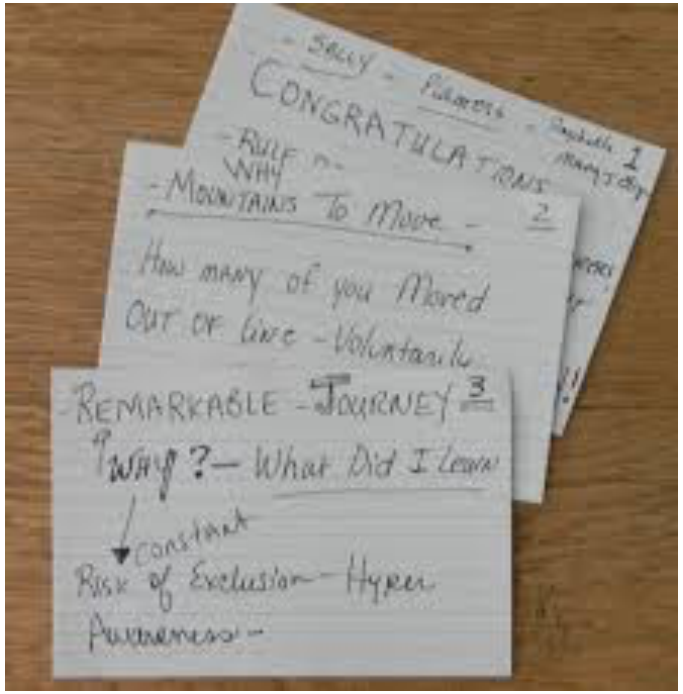
Methods Phase 1: Interviews

- 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



Quality of Methods

Relation to Topic

Frequency of Citation

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

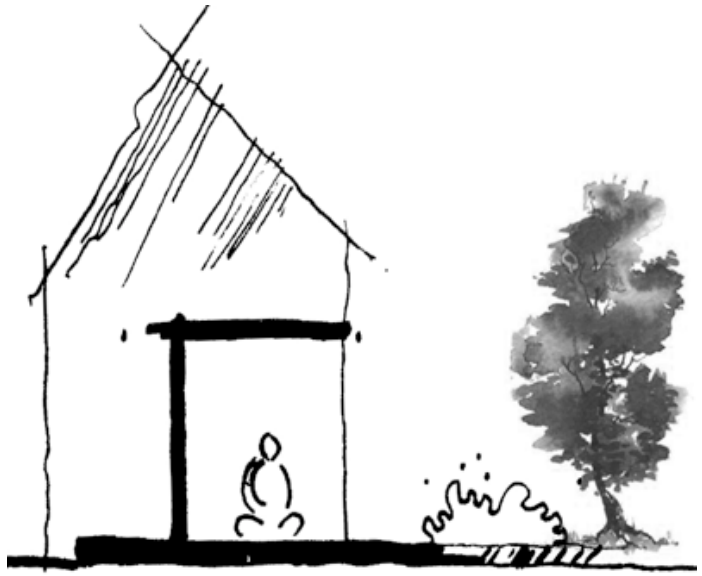
→ Appropriate for Study

→ 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



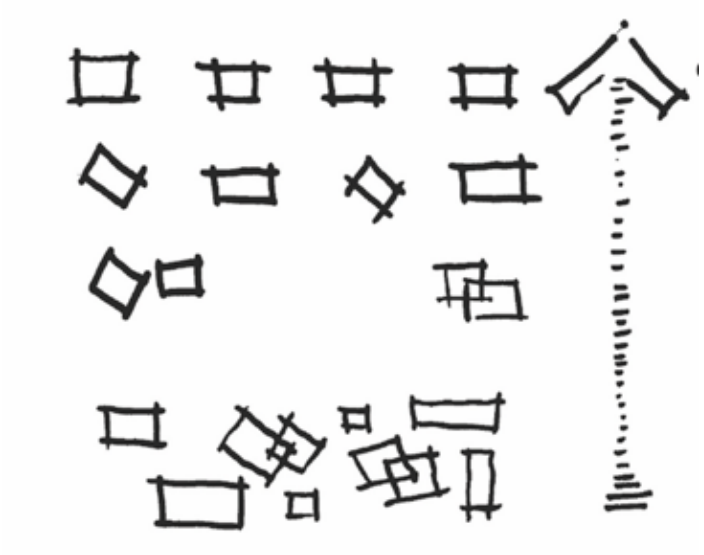
Results: 1. Deinstitutionalization

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].

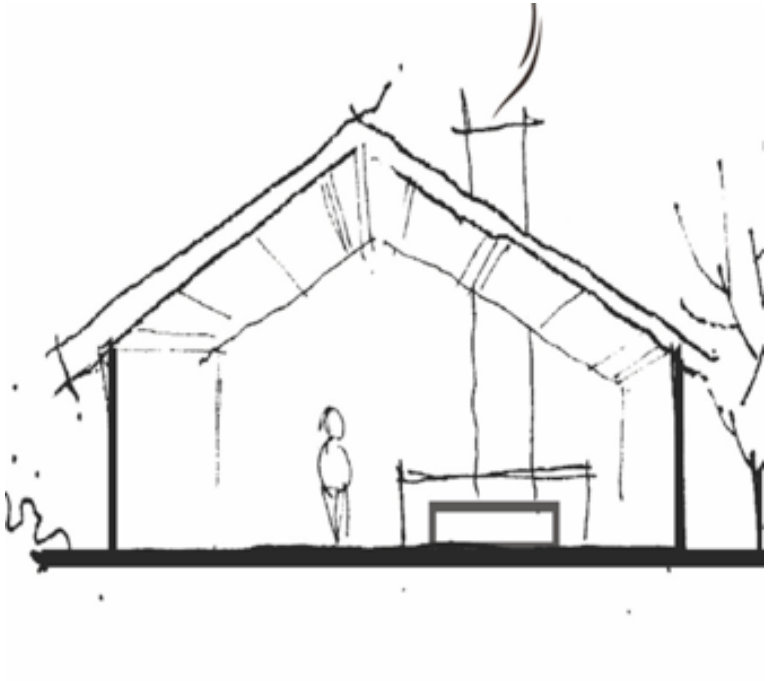
Results: 2. Orderly & Organized

- 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

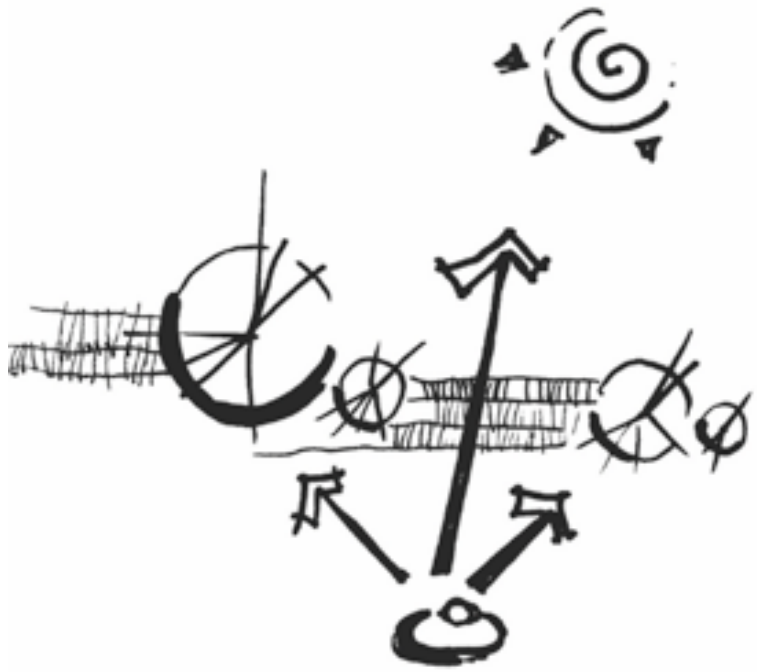


Results: 4. Damage-resistant & Attractive Furnishings

- Most interviewees believed **damage-resistant furnishings are critical**
- But difficult to find durable, non-institutional, reasonably priced furniture

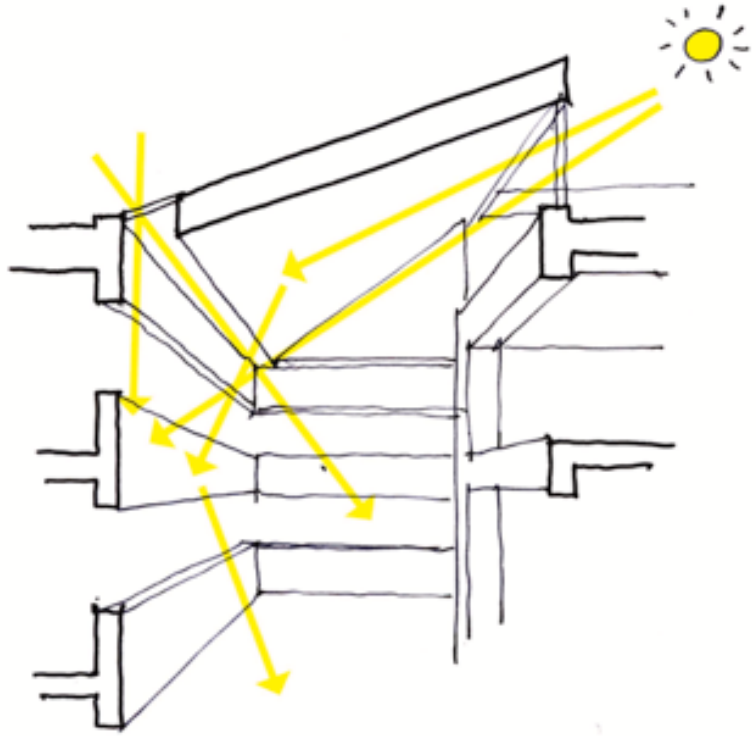
Results: 5. Access To Nature

- 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



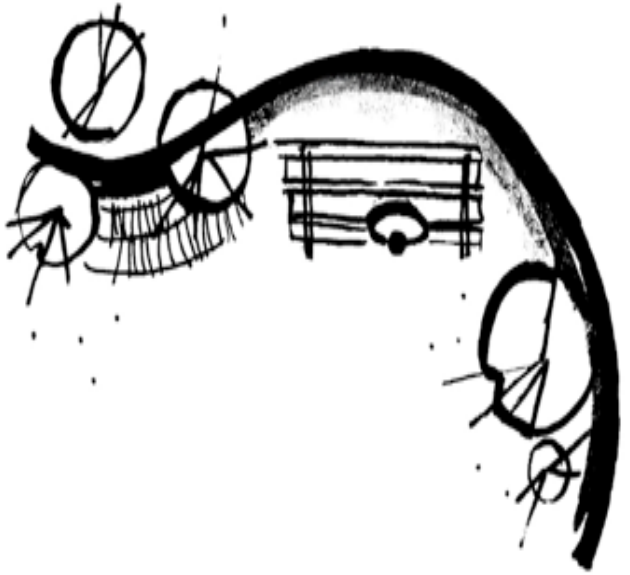
Results: 6. Maximum Daylight

- 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

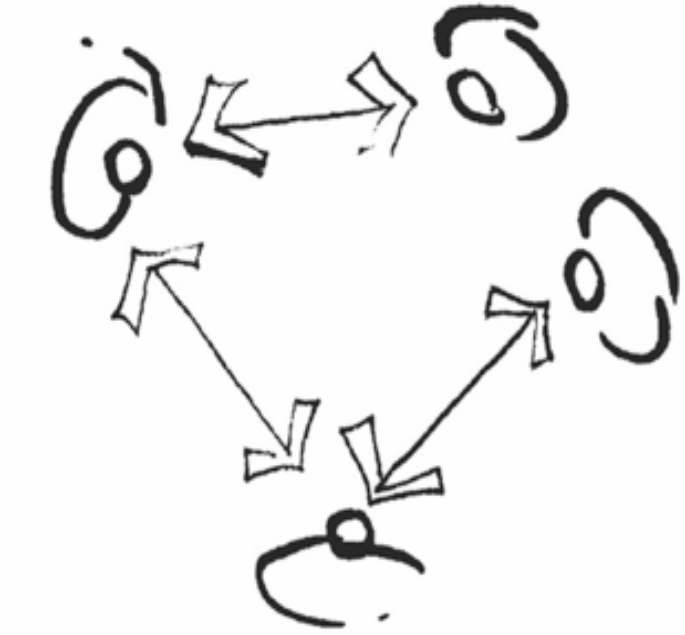
Results 9: Low Density Bedrooms

- 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

Seattle Children's, ZGF/architecture+

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

Bryce Hospital,
Sherlock, Smith & Adams/architecture+

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

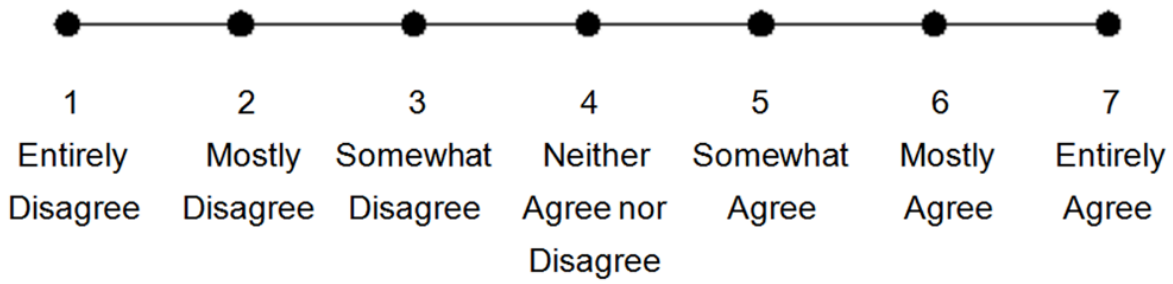
- Most participants felt the development of **suicide-resistant equipment was critical**, evolving
- Few thought that it has already been thoroughly explored
- Additional dialogue required in spite of availability of current guidelines

Topics Generated From Literature Review	% Interviewees Supporting Lit Review Topic for Survey
Deinstitutionalized	100% (16/16)
Orderly/organized	87.5% (14/16)
Well-maintained	87.5% (14/16)
Damage resistant furniture	87.5% (14/16)
Visual/physical nature access	93.8% (15/16)
Maximum daylight	100% (17/17)
Staff safety/security	70.6% (12/17)
Staff support/respite	76.5% (13/17)
Private/low density rooms	100% (17/17)
Social interaction/community	82.3% (14/17)
Mix of seating	94.1% (16/17)
Autonomy & spontaneity	88.2% (15/17)
Patient-staff interaction	94.1% (16/17)
Nurse station observation	94.1% (16/17)
Indoor & outdoor therapy	100% (17/17)
Smoking rooms	64.7% (11/17)
Suicide resistant furnishings	76.5% (13/17)

Topics from Literature Review	Interview/Focus Topics	Combined Content
Deinstitutionalized		Deinstitutionalized
Orderly/organized		Orderly/organized
	Attractive/aesthetic	Attractive/aesthetic
Well-maintained		Well-maintained
Damage resistant furniture		Damage resistant furniture
	Quality landscaping	Quality landscaping
Visual/phys nature access		Visual/phys nature access
	Attractive/comfort furniture	Attractive/comfort furniture
	Good electric lighting	Good electric lighting
Maximum daylight		Maximum daylight
	Noise control	Noise control
Staff safety/security		Staff safety/security
Staff support/respite		Staff support/respite
	Impact of experience	Impact of experience
	Private bathrooms	Private bathrooms
Private/low density rooms		Private/low density rooms
Social interact/community		Social interact/community
Mix of seating		Mix of seating
Autonomy & spontaneity		Autonomy & spontaneity
Patient-staff interaction		Patient-staff interaction
	Positive Distraction	Positive Distraction
	Staff respite	Staff respite
Nurse station observation		Nurse station observation
Indoor & outdoor therapy		Indoor & outdoor therapy
Smoking rooms		Smoking rooms
Suicide resistant furnishing		Suicide resistant furnishing
	Impact of LOS	Impact of LOS
	Impact of unit size	Impact of unit size

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 **useful**ness 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

Quality:	*M*	*SD*	Orderly	Homelike	Aesthetic	Outdoors	Maintain
Maintained	6.26	.690	.05	ns	ns	ns	--
Outdoors	6.01	.796	ns	ns	ns	--	
Aesthetic	5.92	.947	ns	ns	--		
Homelike	5.88	1.025	ns	--			
Orderly	5.80	.957	--				

Maintenance most important quality

Staff safety most important feature

Feature:	*M*	*SD*	Attr furnit	Staff resp	Resis furnit	Elec light	Conf furnit	Daylight	Noise cntrl	Staff safety
Staff safety	6.60	.842	.001	.001	.001	.001	.001	ns	ns	--
Noise control	6.38	.742	.001	.05	.05	ns	ns	ns	--	
Daylighting	6.33	.746	.001	ns	ns	ns	ns	--		
Comfort furniture	6.11	.781	.05	ns	ns	ns	--			
Electric light	6.09	.740	.05	ns	ns	--				
Resistant furniture	5.90	1.146	.05	ns	--					
Staff respite	5.87	1.334	.05	--						
Attract furniture	5.53	1.004	--							

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

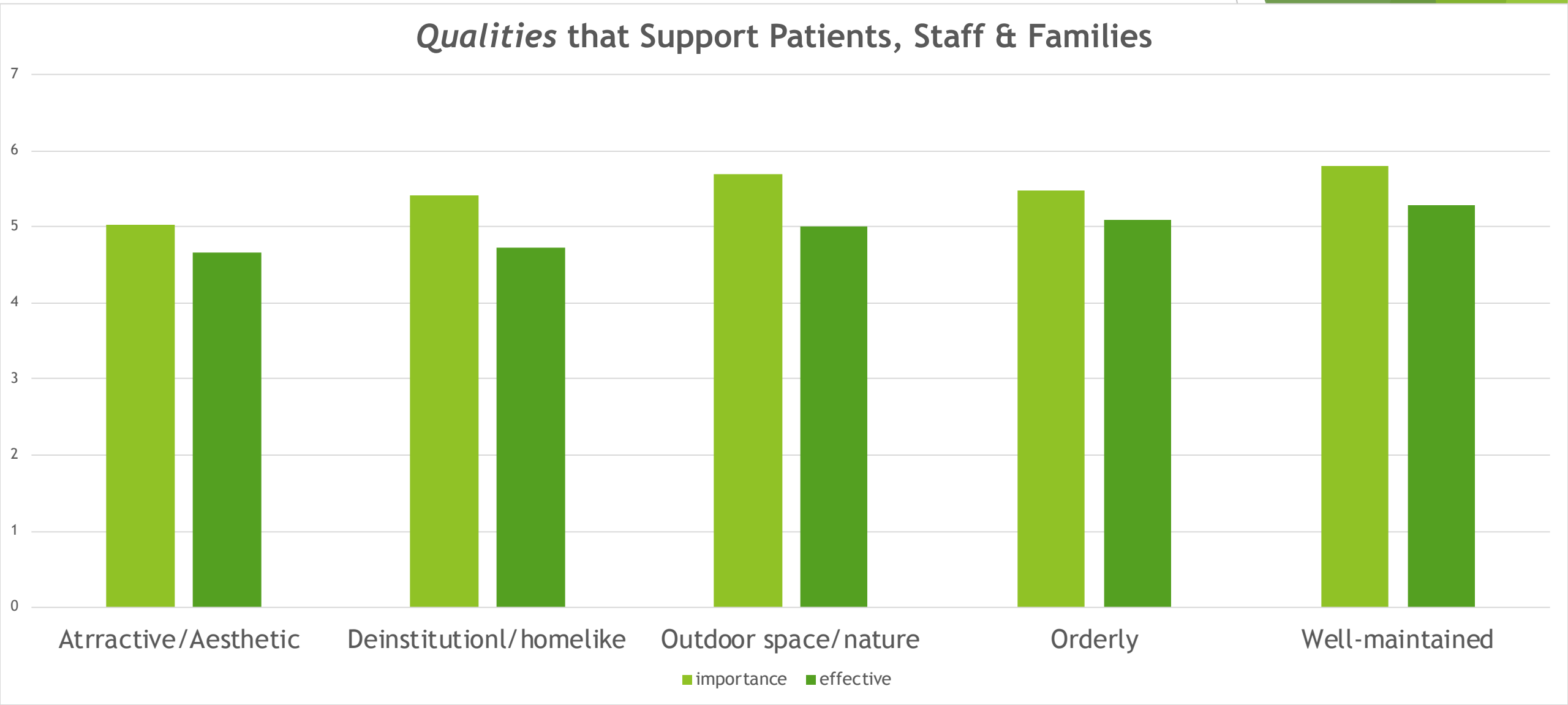
Phase 3: Methods

- **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

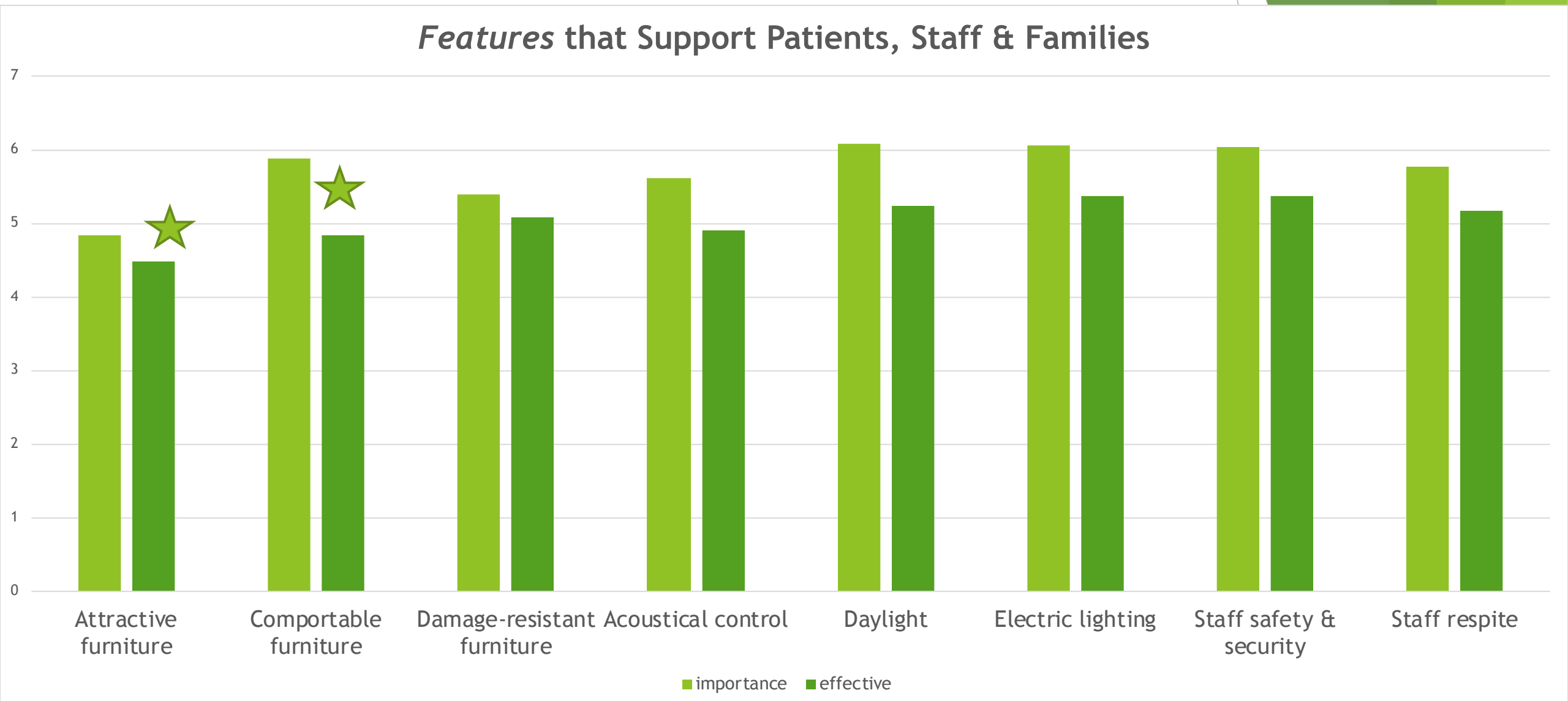
Phase 3: Results

- 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

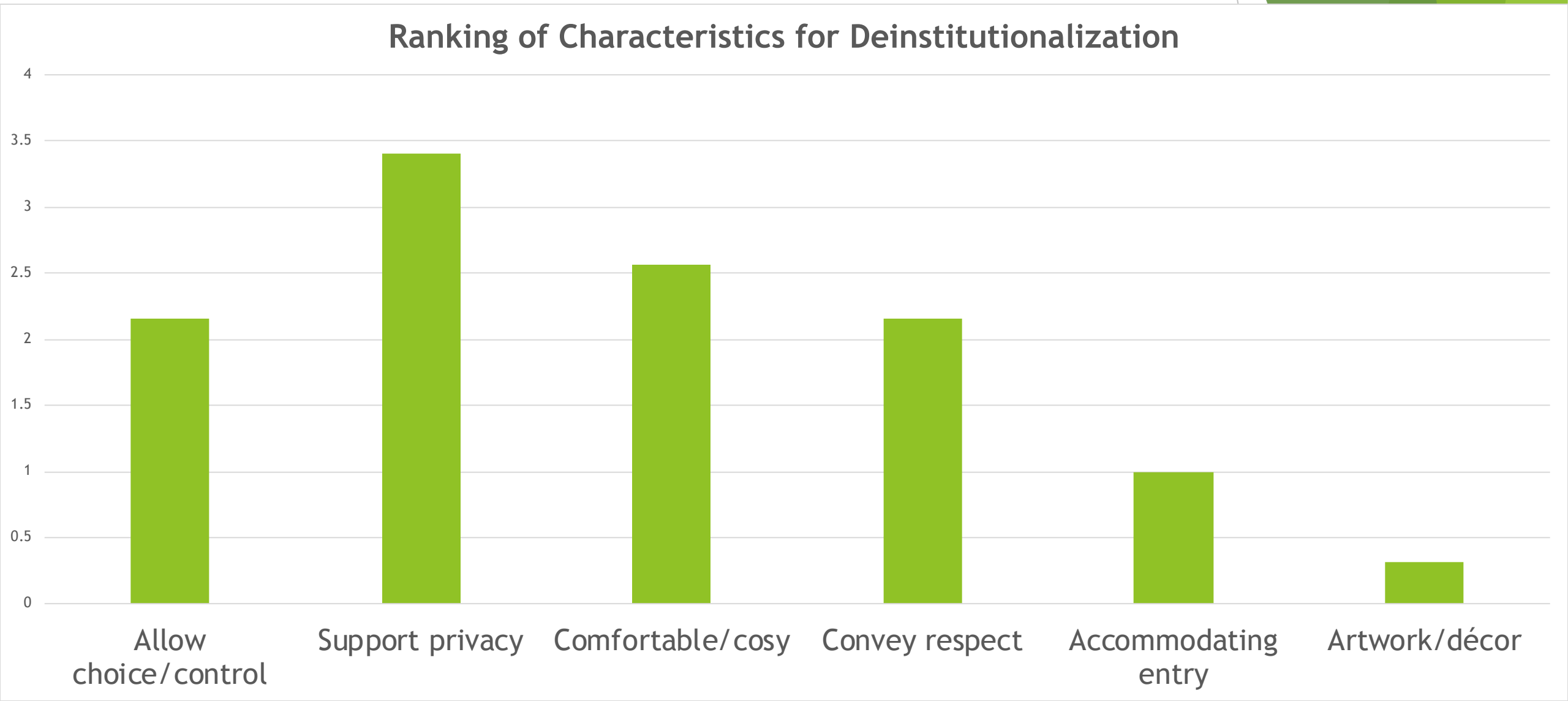
Phase 3: PPED Results



Phase 3: PPED Results



Phase 3: PPED Results



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

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