

HEALING GARDENS IN HOSPITALS THE NECESSITY OF NATURE

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British Medical Association
“The Psychological and Social
Needs of Patients”, 2011

*Landscapes should be
designed with regard
to their therapeutic
value.*

For most of 20th century



Nebraska Methodist Hospital,
Omaha, Nebraska, USA

- Hospitals barely considered “landscape”
- On-site trees often succumbed to cars and parking lots
- Little understanding of (ancient) knowledge about nature and healing
- Hospital design driven by efficiency and infection control

THE IMPORTANCE OF NATURE VIEWS

- 1984: Significant study by Roger Ulrich (Texas A and M University): **views to nature have positive influence on health outcomes**
- Patients recovering from gall bladder surgery with bedside view to trees:
 - fewer post-surgery complications
 - fewer doses of strong pain-reducing drugs
 - went home soonercompared with patients who only had view of brick wall
- **Credible scientific evidence:** nature helps reduce stress and assists in healing

STRESS REDUCTION THEORY



St Michael's Medical Center,
Texarkana, Texas

5-7 minutes in **nature** or viewing natural scene can:

- **reduce physiological indicators of stress**
- improve mood
- aid in healing

Medical authorities began to see **nature/trees**:

- **not just cosmetic extras**
- may speed recovery
- **save money**

Theory developed principally by research of Roger Ulrich & colleagues

From mid-1990s, US hospitals began to include gardens



Waiting room,
St. Anthony's
Medical
Center Heart
and Surgical
Pavilion, St.
Louis, MO

HOSPITAL GARDEN RESEARCH

1994: First systematic post-occupancy evaluation (POE) of hospital outdoor space in US

Studied 4 hospital gardens in San Francisco Bay area:

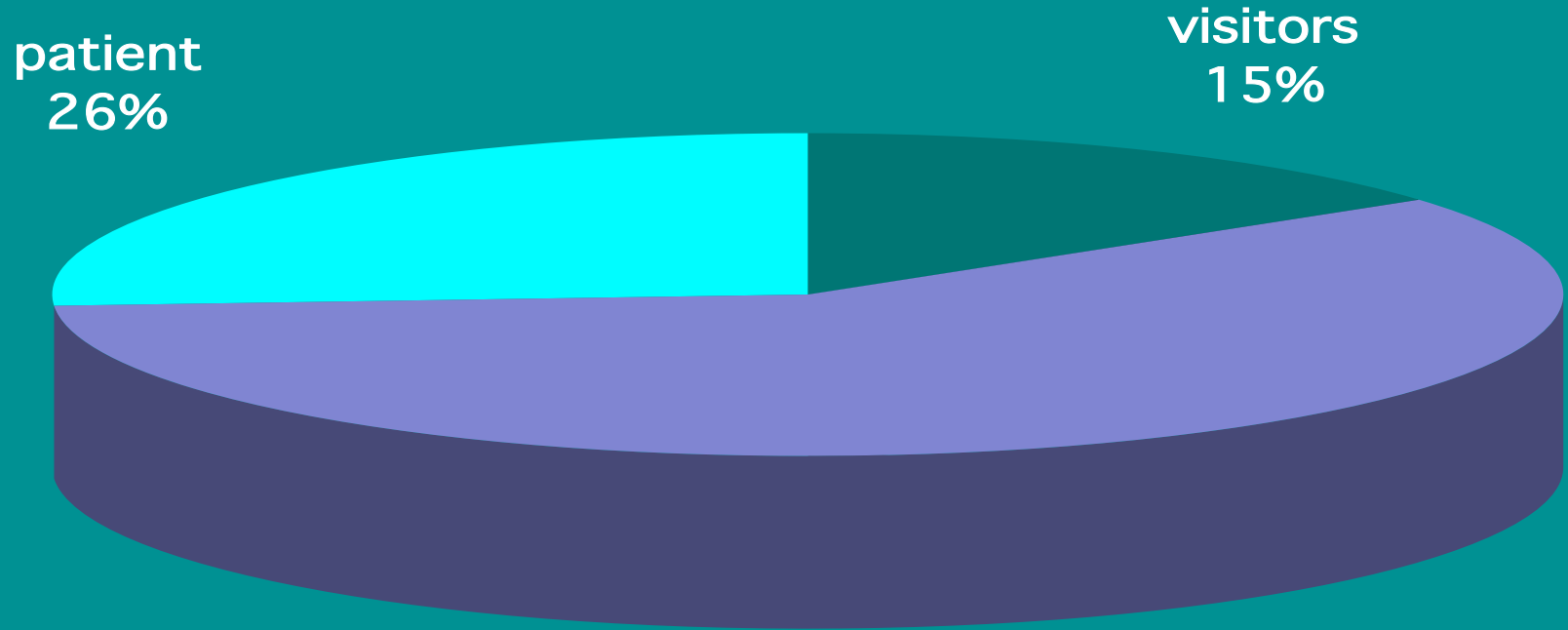
- visual analysis
- behavior mapping
- Interviews



Roof garden,
Alta Bates Hospital,
Berkeley, California

Cooper Marcus & Barnes, 1994

Sample



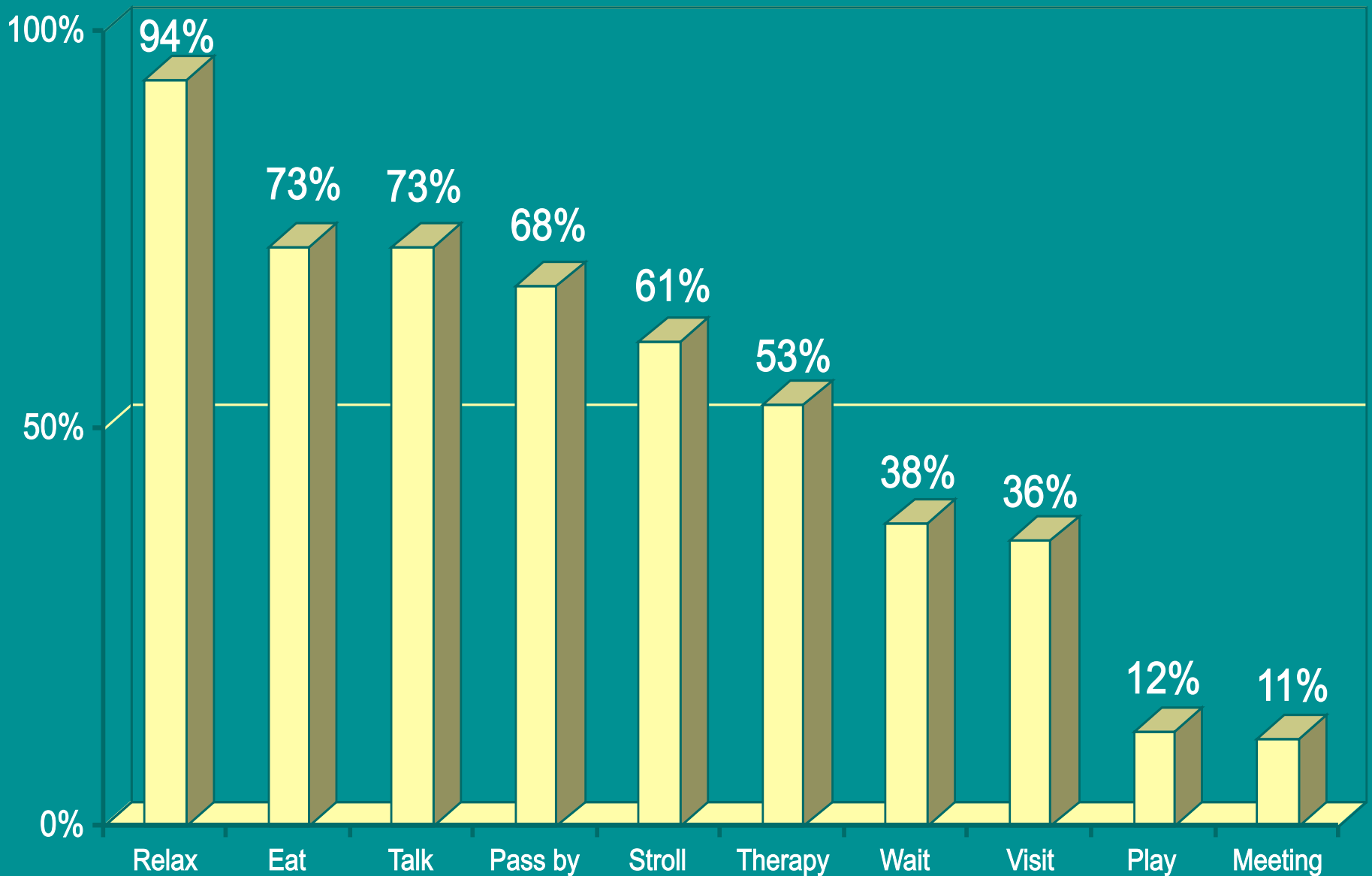
- 2,140 observations

- 143 interviews

73 female

70 male

Activities in the Gardens



How do you feel after spending time in the garden?

	(%)
More relaxed, calmer	79
Refreshed, stronger	25
Able to think/cope	22
Feel better, more positive	19
Religious or spiritual connection	6
No change of mood	5

What is it about the garden that helps you feel better?

(%)

Trees, plants, nature	69
Smells, sounds, fresh air	58
Place to be alone or with friend	50
Views, sub-areas, textures	26
Practical features, benches etc.	17
Don't know	8



Kaiser Permanente
Hospital
Walnut Creek, California

My level of stress goes way down... I return to work refreshed

I sit in the garden before my appointment; it helps me deal with what they will put me through

I work in the Intensive Care Unit which is like a hell hole...sitting here in the sun is like therapy for me

I work underground in the Radiation Department, like one of the Mole People. If I didn't have this garden to come to...sunlight, fresh air, birdsong, trees...I think I'd go CRAZY!"



Further POEs uncovered new issues

- **Too much seating:** never more than 5% occupied
- Seating had black, industrial look
- **Not enough privacy:** lone private seating almost always occupied
- **Not enough shade**

Edward Heart Hospital, Naperville,
Illinois

Cooper Marcus & Barnes, 2008

EVIDENCE-GROUNDED DESIGN THEORY: How Gardens Improve Health Outcomes (Ulrich, 1991, 1999)

EXERCISE

SENSE OF
CONTROL

SOCIAL
SUPPORT

ENGAGEMENT
WITH NATURE

EVIDENCE THAT ALL OF THESE CAN
REDUCE STRESS AND RESTORE SYSTEM
TO STATE OF BALANCE

IMPROVED HEALTH OUTCOMES

(Clinical outcomes, patient satisfaction, cost of care)



1. EXERCISE:

How some hospitals encourage walking:

1. Walking trail around buildings

Edinburgh Royal Infirmary, Scotland



2. Documenting distance around a small courtyard garden

Legacy Emanuel Medical Center, Portland, Oregon

2. OPPORTUNITIES TO MAKE CHOICES, SEEK PRIVACY AND EXPERIENCE A SENSE OF CONTROL

- People need sense of control re: physical and social environments
- On entering hospital, many experience loss of control
- Institution decides...
 - what you eat
 - what you wear
 - when doctor visits, etc.
- **Loss of control** produces stress, worsens health outcomes

2. SENSE OF CONTROL



Moveable furniture

- Nurse can move into shade, place lunch on edge of concrete planter
- Staff working on tight schedules, under strict supervision, regain measure of control in a garden

Alta Bates Hospital, Berkeley, California

3. PROVIDE SETTINGS WHERE PEOPLE CAN EXPERIENCE SOCIAL SUPPORT



- **People with higher levels of social support**
 - are less stressed
 - have better health**
- than those who are more socially isolated

Locate gardens:

- close to patient rooms & waiting areas
- with sub-spaces where visitors & patients can find privacy

4. ENGAGEMENT WITH NATURE



Effects of profusion of green nature:

- + Awakening the senses
- + Calming the mind
- + Reducing stress
- + Helping people draw on their own inner healing resources

Nature cannot mend a broken leg or remove a tumor

...

But it can support & strengthen us before/during/after medical procedures

THE 7:3 RATIO



Best practice: ratio of 7:3 - planting to hard landscape
Not as here (New garden at a London hospital)

WATER

Trinity
Hospice,
London



- Element of nature seen as healing/ purifying since ancient times
- Engaging and soothing:
 - views of still water
 - sounds and views of reflective water
- Water attracts wildlife: reminds us - life goes on in times of ill-health or bereavement



West Dorset
County
Hospital

**BEST PRACTICE AND
OBSERVATION INDICATE
FURTHER DESIGN
GUIDELINES**

5. VISIBILITY:

Garden visible from frequently used interior spaces



**Scottsdale Health Healing
Garden, Scottsdale, Arizona**
Next to café and foyer



**Riverside Medical Center Healing
Garden, Kankakee, Illinois**
Next to main waiting room

6. SHADE: Mitigates temperature and required for patients on certain medications



- Preserve mature trees on site. (Kaiser Permanente Medical Center, Walnut Creek, California.)



- Where no trees available or possible, provide shade with sail cloth or structures. (Veterans Hospital, Palo Alto, California)

7.ACCESSIBILITY



- People of all ages and abilities able to enter and move around the garden
- Paths: wide enough for two wheelchairs to pass (minimum 6 feet)

8. PRIVACY



- Important that people can find a **place to be alone**, to “escape”
- Especially at hospice, cancer facility, acute care hospital (waiting for family member in surgery)

Critical that staff have access to nature



Attention Restoration Theory

Exposure to nature restores a person's ability to concentrate after focused effort has created mental fatigue

Theory developed principally by Rachel and Stephen Kaplan, colleagues and former students, University of Michigan

EVIDENCE FOR ATTENTION RESTORATION THEORY



Study of 32 nurses at two Atlanta hospitals: After 12-hour shift, 60% of those with nature view - alertness level improved or remained same . No view or non-nature view - alertness level of 67% declined
(Pati, Harvey and Barach, 2008)

Improved restorative **quality of break areas** may lead to stress reduction, improved patient care (Multi-method research, 993 US nurses. Nejati et al, 2015)

Nurses requested:

Comfort

Privacy



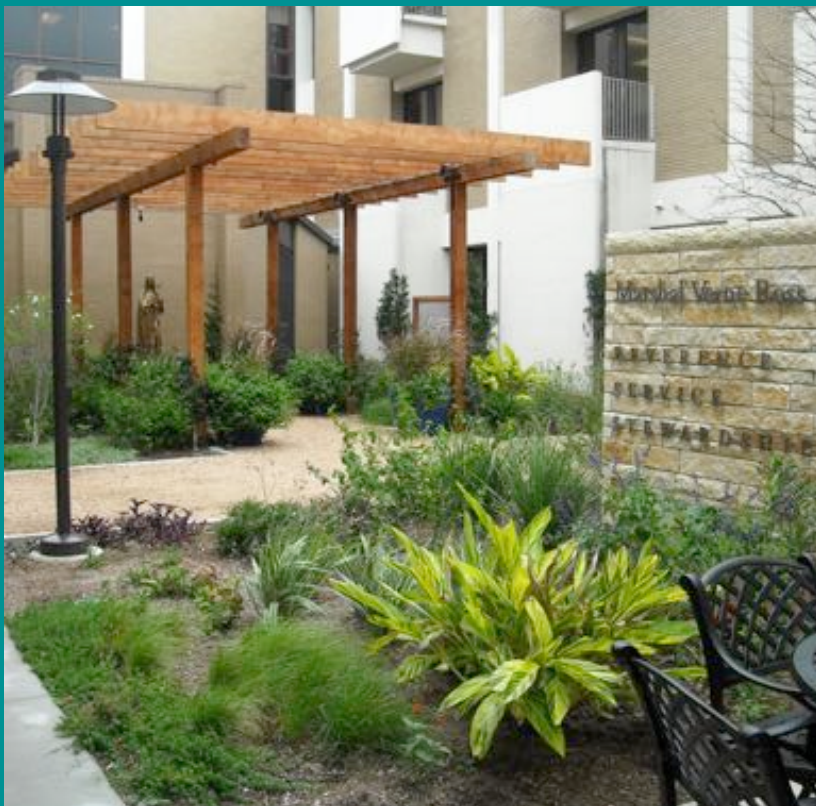
... Places away from public to hold meetings, discuss patient issues, relax



Re-design of courtyard at Texas hospital with input from nurses (Naderi and Shin, 2007)



- BEFORE: Bleak appearance, uncomfortable furniture, lack of shade, fish-bowl effect, rarely used
- AFTER: Added greenery, shade arbors, multiple semi-private seating niches



WHY IS GARDEN USE BY STAFF SO IMPORTANT?

Approx. 250,000 deaths per year in US hospitals due to medical errors (2013 estimate)

BIG QUESTION:

Might calmer workspace with opportunities for breaks in nature result in fewer staff errors?

IMPEDIMENTS TO PROVISION OF HEALING GARDENS

1. COST OF INSTALLATION:

Many existing gardens in US and UK supported by charities or philanthropic donations

Olson Family Garden, St Louis Children's Hospital:
\$1.9 cost - gift from local philanthropic family. Heavily
used by families, children, and staff.



2. Cost of maintenance

- Some gardens have **endowments** covering maintenance
- Some maintained by local garden clubs or other **volunteers**
- Some designed for **low or no maintenance**, and/or kept permanently locked to prevent use
- Ideally “**User manual**” outlines future maintenance, and documents goals of design for future staff

**Outdoor space
at Publicly Financed Initiative hospitals
(UK National Health Service)
Too often created for low maintenance or
non-use**

Edinburgh Royal Infirmary



Halmyres Hospital Glasgow



3. Lack of onsite space:

When space is limited for on-site garden, hospitals have provided

**Views to a borrowed
landscapes**



**Access to nearby natural
landscapes**





Raised the building
to permit views into
surrounding trees
and gardens



Maggie's Centre (cancer
resource), Oxford, England

Brought nature inside: Lobby of Credit Valley Hospital, Toronto, Canada



Created an interior garden from rocks
excavated to build the building



Nursing
home for
elderly
seniors,
Ontario,
Canada

IMPEDIMENTS TO USE

More healing gardens being created,
but...are they becoming a fad?

- Some “dropped” into designs with little regard for location, patient needs, research evidence etc.
- Trade magazines: *Healthcare Design* (US) and *Hospital Development* (UK) feature “healing gardens” which do not warrant the name
- Some hospital developers and designers see any piece of outdoor space as worthy of the title “healing garden”

What is healing about this?

No privacy

Minimal greenery

No shade

Paths that lead nowhere...



When **METAPHOR** employed as basis of design,
people may not understand it or use garden.
Garden design symbolizing path through treatment.
(Cancer hospital, Arizona.)



Designer employed **metaphor** of “two cells communicating in dynamic balance”. Few recognized as garden or used it. (Highlands Maggie’s Centre, Inverness, Scotland)



*Regardless of whether a garden might garner praise in professional journals as “good” design... **the use of the term “healing” ethically obligates the garden designer to subordinate ...his or her personal tastes** to the paramount objective of creating a user-centered, supportive design.*

Roger Ulrich, 1999

Guidelines for Design and Construction of Hospitals (US Facilities Guidelines Institute 2014) recommends:

- Minimum standards for **views and access to nature**
- Separate **outdoor spaces for staff**
- **Designed by landscape architects** with experience in healthcare design as part of interdisciplinary team

Despite some problems
with design of healing gardens,
trends suggest further demand

1. GARDEN DESIGNS BASED ON MEDICAL DIAGNOSES

- Promising new direction
- Gardens for specific patient populations designed with contributions from clinical staff
- Aesthetics and patient needs receive equal attention

Oregon Burn Unit Garden, Portland, Oregon



- Landscape architect brought hospital staff onto design team
- **Shade** essential for patients recovering from burns & skin grafts
- **Different surfaces & slopes** for those learning to walk again
- **Paths** wide enough for beds
- Private outdoor area for **staff**

Design: Brian Bainson, Quatrefoil

Clare Cooper Marcus Naomi A. Sachs Foreword by Roger S. Ulrich



Therapeutic Landscapes

An Evidence-Based Approach to Designing
Healing Gardens and Restorative Outdoor Spaces

WILEY

2. Recognition of importance of evidence- based design

*The process of
basing decisions
about the built
environment on
credible research to
achieve the best
possible outcomes*

(Center for Health Design, 2008)

3. Better dissemination of information

Therapeutic Landscapes Network:

Resource for gardens and landscapes that promote health and well-being.

www.healinglandscapes.org

TherapeuticLandscapesNetwork The resource for gardens and landscapes that promote health and well-being

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4. More hospitals recognizing garden benefits (St Joseph Memorial Hospital, Santa Rosa, California)





An enticing
place to
explore or
take a rest

Future adoption of healing gardens?

More likely if:

- designed as part of treatment regimen
- includes contributions from clinical staff
- shown to reduce healthcare costs by:
 - Shortening hospital stays
 - Reducing need for pain medication
 - Hastening rehabilitation process
 - Reducing staff stress



Above all we must pay
more attention to
**working
environments for
staff...**

Access to gardens for
relaxing...



Instead of windowless
break rooms

Critical staff shortages: By 2020 in US projected shortage of 800,000 nurses, 96,000 physicians



- Staff often prime users of healthcare outdoor space
- Presence of garden may affect hiring and retention of staff
- Designers need to emphasize in convincing client to include outdoor space

Thank you!

Questions?

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