



COMMUNITY INPATIENT STROKE SURVIVOR TREATMENT & RECOVERY CENTER

The Riverside Recovery Center is an inpatient stroke rehabilitation facility in San Antonio that focuses on the path of



65% Hispanic

52%

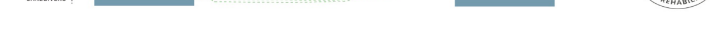
48%

SENSORY DISTURBANCE

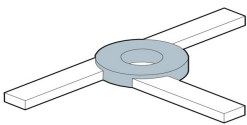
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MENTAL HEALTH

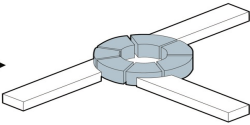
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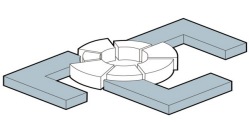
DESIGN + LAYOUT FOR STROKE RECOVERY



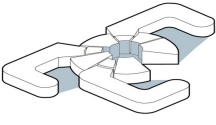
RADIAL DESIGN
360 Circulation



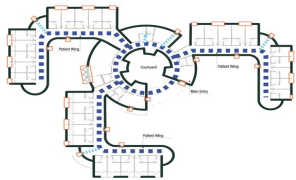
PROGRAM
Central Common Spaces
Simple Wayfinding



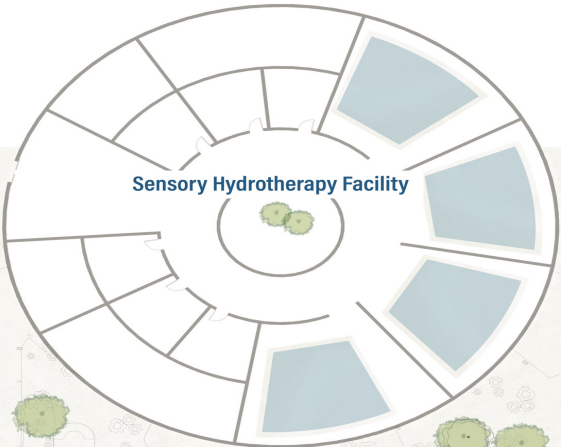
PATIENT WINGS
Single Loaded Corridors
Private Patient Patios



GARDEN SPACE
Central Courtyard
Pocket Plazas
Soft Spatial Spaces



CIRCULATION
Main path of travel
Minor path of travel
Exterior access



SINGLE FLOOR + CENTRAL PLAN
Radial, asymmetrical, and single-story configurations have the least amount of wayfinding problems [3, 5] fall-related injuries are reduced when stairs are not present [2]

INDIVIDUAL PATIENT ROOMS
Support patient-family-staff privacy. Shared rooms impact quality of night-time sleep, increase chances of infectious spread, and can negatively effect patients mental-health [4, 6]

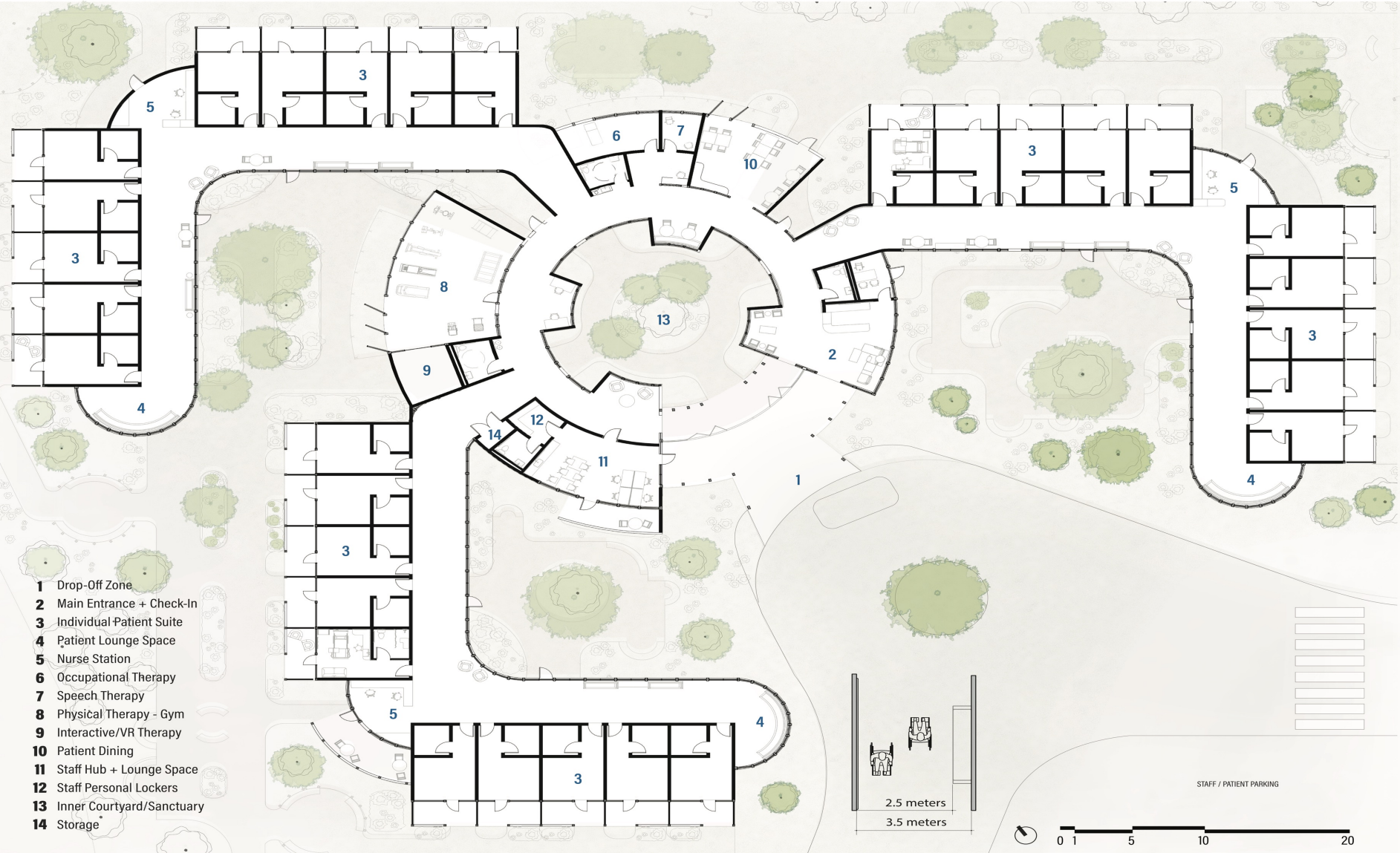
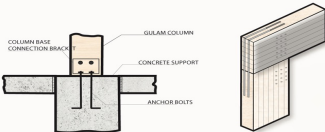
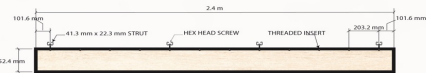
SINGLE-LOADED CORRIDOR
A space to socialize, practice walking mobility, view the outdoors, and provide daylight [10] Patients spend over 75% of their time socializing in the corridors, oversized corridors allows them to actively socialize while walking or lounging without impeding staff work.

GARDEN THERAPY
Implemented to provide a multi-sensory experience, increases socialization, and sense of community [9] Local flora was selected with xeriscaping techniques to minimize maintenance requirements and attract local fauna such as birds, small animals and insects.

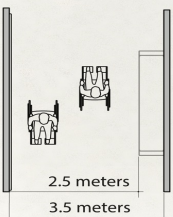
PATIENT LOUNGE SPACES
Common areas near patient rooms invite patients to engage outside of their rooms [8, 11] and opportunity to practice ADLs (Activities of Daily Living).

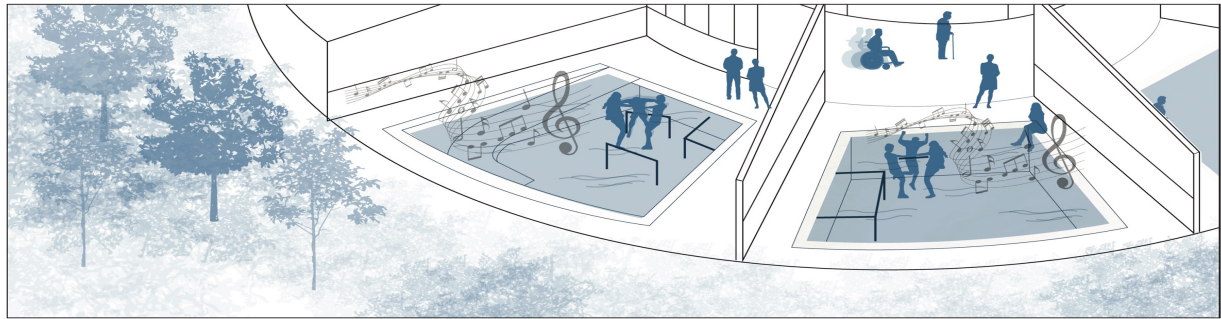
ACCESSIBILITY WITH COMFORT
Generously sized corridors to maximize patients ability to get to spaces of 3.5 meters enough to comfortably fit two wheelchairs for the patient wings.

GULAM BEAM + COLUMN DETAILS
Use of wood in healthcare settings is becoming more prominent due to its warm and comforting properties. Being in the presence of wood structures have shown to reduce stress levels and anxiety. []



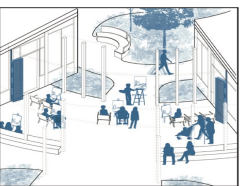
- 1 Drop-Off Zone
- 2 Main Entrance + Check-In
- 3 Individual Patient Suite
- 4 Patient Lounge Space
- 5 Nurse Station
- 6 Occupational Therapy
- 7 Speech Therapy
- 8 Physical Therapy - Gym
- 9 Interactive/VR Therapy
- 10 Patient Dining
- 11 Staff Hub + Lounge Space
- 12 Staff Personal Lockers
- 13 Inner Courtyard/Sanctuary
- 14 Storage



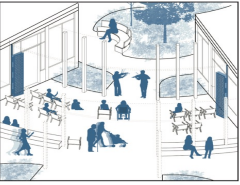


HYDROTHERAPY AND SENSORY TREATMENT

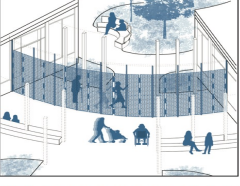
Innovative addition for this clinic includes a hydrotherapy center with **underwater music** and a **sauna** room for group **yoga**. Hydrotherapy in conjunction with traditional land therapy is an **effective low-impact way to reduce pain, improve balance, and is less strenuous than static physiotherapy**. [20]



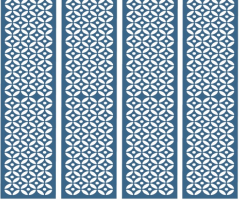
COMMUNITY SPACE
A space where patients, guests and staff can engage in social activities provided by rehabilitation facility. Rotating events like performances and group therapy sessions encourage stroke survivors to interact outside of their scheduled rehabilitation sessions. [11]



PAINTING
Group therapy can take place in the **open air community space**. Different creative specialists are welcomed to teach stroke patients a variety of hands-on crafts.

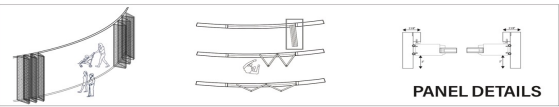


PERFORMANCE
Bringing in classical performances such as violinists can gather stroke patients, family, and staff members in this community space. Patients have a lot of unscheduled time so providing activities can help pass time and **reduce stress and anxiety**.



SAFETY
The panels are closed during non-activity hours and when staff is not present in the space. This gives the patient a **sense of safety** while walking around the enclosed facility.

ACCORDION-STYLE BREEZE PANELS
Inspired by the prominent presence of Mexican-American culture in San Antonio; When fully open, they allow the prominent southeast winds to enter the heart of the facility and acts as a **flex space to engage the exterior with the courtyard**.



PANEL DETAILS



SENSORY GARDEN The sensory gardens placed throughout the facility gives patients the ability to engage their five senses and allow therapeutic scents and sounds for everyone. [9]



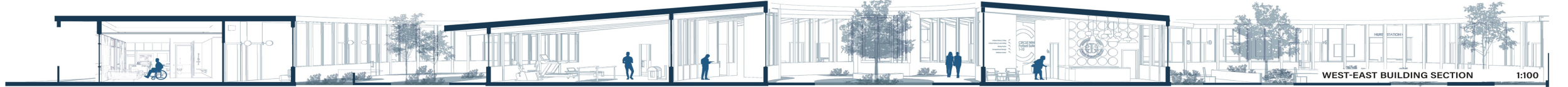
EXTERIOR PLAZA The site design of the facility includes **trail-like landscapes** and **sensory gardens** throughout that offer seating and pergolas for patients, family, and staff. **Positive distractions** like nature can create a sense of **motivation** to interact with the outdoors. [12]



INNER COURTYARD + SANCTUARY The inner courtyard is the heart of the facility that provides lush landscape views to the patients all around, and has a serene space for patients to get away.

NATIVE PLANTS Combining **Xeriscaping** principles and native plants to achieve a low maintenance landscaping design

SHRUBS	TREES	PLANTS
Mexican Skullcap Wright's Skullcap Artemisia Texas Sage Velvet Mallow	Texas Red Bud Guajillo Huisache	Red Yucca Firecracker Fern Pride of Barbados Thryallis



WEST-EAST BUILDING SECTION 1:100

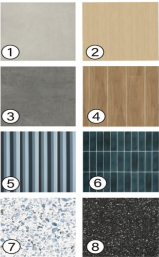
1. Motor impairment is the most common deficit after stroke (Lui & Nguyen, 2018)
2. Falling injuries are higher in stroke elders (Lui & Nguyen, 2018)
3. Spatial configurations with the least amount of wayfinding problems are radially designed facilities (M. Kevdzija, 2022)
4. Shared rooms were seen to negatively impact activity during the day because of impaired quality of night-time sleep (H. Janssen et al, 2022)
5. Patients make errors when exiting the elevator since all floors are arranged in the same way
6. Compact and symmetric layout ...might have contributed to challenging wayfinding (Kevdzija & Marquardt, 2021)
7. 25 studies found SPTs (single person rooms) had clearly significant effects on patient satisfaction, noise/sleep quality, and privacy, with mixed results for infection rates. (Taylor, Card, Piatkowski, 2018)
8. Motor impairment is the most common deficit after stroke (Lui & Nguyen, 2018)
9. Therapeutic garden increases sense of socialization, self-esteem, and life satisfaction.
10. For all users of the garden, including the partially sighted, scented and brightly colored flowers and leaves provide an attractive sensory experience. (B F Rieuwpassa et al, 2020)
11. Although the corridor is traditionally used as circulation space, in the context of daily life in rehabilitation clinics it also becomes a space where patients socialize, exercise, enjoy the view, enjoy the solitude, walk around and perform other activities.
12. Staff reported that group activities were rarely offered (H. Janssen et al, 2022)



PATIENT SUITES EMPOWERMENT THROUGH INDEPENDENCE

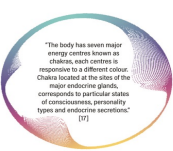
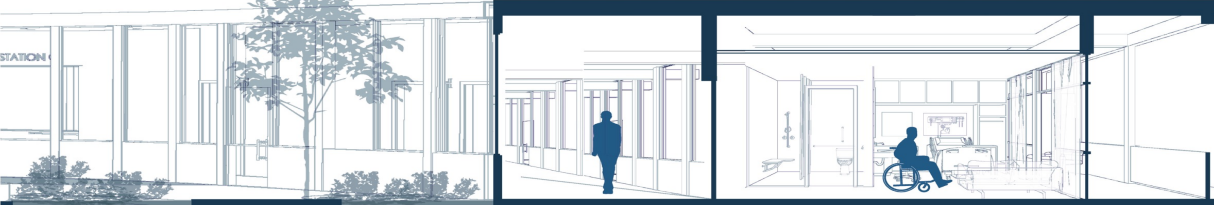
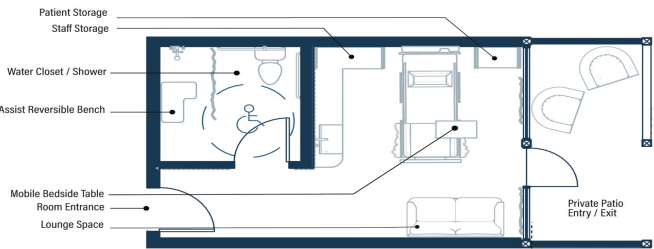


- A** Upper storage cabinets for staff and discreetly hides mechanical equipment for patient safety
- B** Closet space for patients personal belongings with accessible spaces accommodating for patients with limited mobility.
- C** Private secluded patio space for patients and their guests.
- D** Patient bed placed further away from the corridor to reduce noise disruption while also allowing patients to see access points to the room for psychological comfort.
- E** Private water closet and shower enclosed for visual privacy, acoustic and scent control.



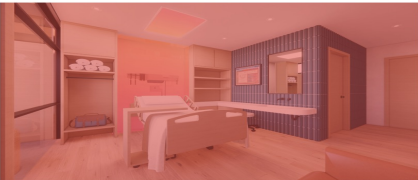
MATERIALS + FINISHES

- ① High Pressure Laminate | Faux Concrete
- ② High Pressure Laminate | Wood
- ③ Polysafe Stone fx PUR | Jurassic Stone
- ④ Interface, LVT | Textured Woodgrains, Hemlock
- ⑤ Stratum Blue Matte 3D Wall Tile
- ⑥ Isola Capri Polished Ceramic Tile
- ⑦ Speckled Blue Quartz Countertop
- ⑧ Home Black Galaxy Quartz Countertop



3
PATIENT WINGS
Private rooms house single patients, provides a private space for guest interaction, and acts as a consulting / exam room

10
SUITES PER WING
- Private lounge space
- Private bathroom
- Private patio space
- Each room has a unique view of sensory gardens and river front



LIGHTING DESIGN + CHROMOTHERAPY BENEFITS

The lighting in patient suites provides focused, glare-free illumination for patient rooms and is designed to create a calm, comforting environment. The recessed fixtures reproduces natural light patterns and colors. Exposure to light has important effects on human physiology that are independent of visual perception. These non-image forming effects of light include the regulation of circadian rhythms, melatonin production, changes in core body temperature, sleep propensity, and alertness. [16]



VR THERAPY
"Virtual reality (VR) seems to be an alternative to conventional physiotherapy (CT), providing virtual environments and multisensory inputs to train balance in stroke patients." [19]

PATIENT SUITE PLAN

PATIENT SUITE SECTION 1:50



MAIN ENTRY / RECEPTION
Lighting selections chosen based on efficiency, functionality and capabilities. Fixtures have dimmable capabilities and occupancy detection.



PATIENT ACCOMMODATION WINGS

Color in Healthcare Settings-- Materiality and color can be used to create comfortable environments reducing stress and anxiety. Color deficiency can cause sensory deprivation and boredom. [12] Wayfinding is provided via pictograms, maps, braille, signage, color-coding, symbols, and other environmental cues. Promoting patient's autonomy during their stay and reducing the chances of patients becoming lost in the facility.



DINING SPACE/ NOURISHMENT AREA

Positive Visual Distractions [12]
Open common areas have positive distractions such as exterior views, nature elements placed throughout the interior, simplistic artwork reflecting the environment they live in, access to television, books and magazines, a nourishment area with snacks, water and tea.



STAFF WORK + LOUNGE SPACE

Separation from caregiver and patient space reduces stress for caregivers--allowing privacy for HIPAA concerns and acoustic control in work spaces.

12. Using Positive Visual Distractions and Color in Healthcare Settings to Reduce Patient stress & increase patient satisfaction (Dankner, 2017)

13. Why hospital design matters: A narrative review of built environments research relevant to stroke care (Bernhardt, et al, 2021)

14. Design suggestions of the Clinical Upper extremity rehabilitation equipment for stroke patients (Chen & Huang, 2016)

15. Magwood, Gayenell S.; White, Brandi M.; Ellis, Charles. Stroke-Related Disease Comorbidity and Secondary Stroke PreventionPractices Among

16. Alkozei, A., Smith, R., Piser, D. A., Vanuk, J. R., Berryhill, S. M., Fridman, A., Shane, B. R., Knight, S. A., & Kilgore, W. D. (2016). Exposure to Blue Light Increases Subsequent Functional Activation of the Prefrontal Cortex During Performance of a Working Memory Task. Sleep, 39(9), 1671-1680. <https://doi.org/10.5665/sleep.6090>

17. zeemi, S. T., & Raza, S. M. (2005). A critical analysis of chromotherapy and its scientific evolution. Evidence-based complementary and alternative medicine : eCAM, 2(4), 481-488.

18. "Post-Stroke Fact Sheet", NINDS, Publication date April 2020. NIH Publication 20-NS-4846

19. Cortés-Pérez, I, Nieto-Escamez, F. A., & Obiero-Galán, E. (2020). Immersive Virtual Reality in Stroke Patients as a New Approach for Reducing Postural Disabilities and Falls Risk: A Case Series. Brain sciences, 10(5), 296. <https://doi.org/10.3390/brainsci10050296>

20. Pérez-de la Cruz S. (2020). Comparison of Aquatic Therapy vs. Dry Land Therapy to Improve Mobility of Chronic Stroke Patients. International journal of environmental research and public health, 17(13), 4728. <https://doi.org/10.3390/ijerph17134728>

