

Multimodal Sensory Stimulation: Value of Partnering with Family in an Intensive Care Unit

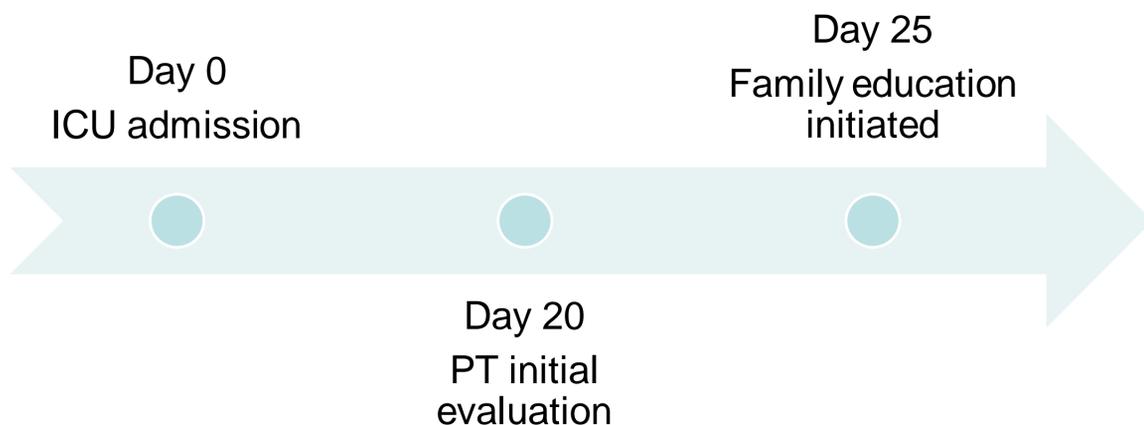
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Background/Purpose:

- Multimodal sensory stimulation has been reported to facilitate improved consciousness in comatose patients.
- However, it is not always feasible for therapy staff to provide the recommended amount of sensory stimulation.
- There is also evidence that sensory stimulation provided by family members is more effective than by an unfamiliar staff member.
- However, engaging family early during acute phase could be challenging due to family availability and their comfort level.

Case Description:

- 25 year old female presented after a fall from 55 feet
- At the time of admission, patient unresponsive with Glasgow Coma Scale (GCS) Score of 5
- Imaging demonstrated diffuse traumatic brain injury with left subdural and subarachnoid hemorrhages and extensive facial and skull base and extremity fractures.
- Patient required intubation for ventilatory support and external ventricular drainage catheter (EVD) for maintaining intracranial pressure



Intervention:

- Family member(s) were trained on
 - multimodal sensory stimulation - music, speaking, reading, tactile using different textures, presentation of photos, smell, and taste
 - appropriate therapeutic exercises utilizing teach back method
- A sensory bag with various textures for tactile stimulation was provided to family (see Figure 1)
- A log to document the type of stimulation provided and amount of time was provided



Figure 1. Sensory kit for tactile stimulation

Outcomes:

- Treatment included 16 PT sessions over 20 weekdays.
- Sensory stimulation provided by family totaled over 20 hours.

Outcome Measures	Prior to intervention (day 20)	Post intervention (day 49)
Glasgow Coma Scale	5	10
Coma Recovery Scale-Revised	3	6

Clinical Relevance:

- Family training to provide frequent, meaningful, and graded sensory stimulation coincided with improvements in arousal.
- Maintenance of stimulation log aided with proper dosage of coma stimulation.
- Education of family is strongly recommended for early engagement in patient's care after severe traumatic brain injury.
- Early engagement of the family in the intensive care unit is beneficial to provide appropriate multimodal sensory stimulation outside of therapy sessions.

References:

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