Lehigh Valley Health Network

LVHN Scholarly Works

The Link Between Sleep Deprivation and Delerium

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Background/Significance

Delirium is a common problem on 7A, the neuroscience unit. Many factors result in delirium especially in the in-patient setting. In the hospital, and on 7A in particular, patients verbalize not getting enough sleep. The purpose of this research project is to determine whether lack of sleep has a result on delirium.

PICO QUESTION

- In the in-patient Neuroscience population, will instituting a sleep hygiene menu vs continuing the status quo decrease the number of positive CAM scores during hospital stay.

- P: In-patient Neuroscience population

- I: A Sleep hygiene menu

- C: Status quo

- O: A decrease in the number of positive CAM scores

TRIGGER?

- ## Knowledge v. Problem

  - A clinical problem was detected on 7A. Staff recognized delirium within their patients. Staff is aware that delirium can be prevented.

  - There is a limited amount of research available that relates lack of sleep to delirium, which triggered the research for this project.

EVIDENCE

- ## Delirium versus Dementia
  - Can be hard to determine
  - Delirium is an acute physiological brain dysfunction which has a sudden onset. Symptoms either happen abruptly or over a period of 24-72 hours (Beary, 2013)
  - Dementia manifests over time and progresses throughout years (Beary, 2013)
  - Patients with delirium were more likely to have longer stays, an older median age, and more frequent drug related adverse event codes than patients without delirium (Lin, 2010.)
  - Many nurses agree that delirium is worse at night (Agar, 2011.)

- ## Effects of Sleep on Delirium
  - Several studies recognized cognitive declines from sleep deprivation to include decreases in behavioral alertness and ability during tasks requiring vigilance, reduction in energy levels, negative affect on decision making and the ability to carry out normal behavior. Not getting enough sleep is associated with difficulty concentrating and poorer memory (Pilkington, 2013,) (Perry, 2013.)

EVIDENCE

Successful Interventions:

- Non pharmacological interventions included de-cluttering the environment, having a light on in the room, providing familiar objects for the patient, providing a structured routine with consistent care by nursing staff (Agar, 2011.)

- One to One's were thought to be a good way to provide a safe environment. Restraints, on the other hand, were not recommended by several participants (Agar, 2011.)

- "..the use of earplugs decreased the risk of delirium or confusion by 50%." (Alway, 2013)

- "A significant reduction in mortality was achieved…[with implementation of a Closed Observation Unit]." (Eeles, 2013)

- Opiates and Benzodiazepines have been proven to make delirium worse.
  - One study showed that the agitation of delirium is often confused with pain, and patient's delirium can be made worse by this case of mistaken identity (Agar, 2011.)

Current Practice at LVHN

- LVHN currently does not have a practice related to sleep hygiene. Through research, the goal is to find evidence-based practice that can be implemented throughout LVHN.

IMPLEMENTATION

1. Process Indicators and Outcomes
   - Positive vs. Negative CAM scores
2. Baseline Data
   - Comparison of patient perception of sleep vs. CAM score
3. Design (EBP) Guideline(s)/Process
   - Sleep Hygiene Menu
4. Implemented EBP on Pilot Units
   - 30 patients were studied for baseline and 30 patients were studied post intervention on 7A
5. Evaluation (Post data) of Process & Outcomes
   - Data collected is limited. Further research needs to be done to determine success/failure of this research project
   - A future study with a larger population will further determine success of intervention
6. Modifications to the Practice Guideline
   - Altering process for implementing sleep interventions
7. Network Implementation
   - Implementation of sleep hygiene menu

Practice Change

- The plan is to be able to implement a sleep hygiene menu network wide. This sleep hygiene menu will assist clinical staff in helping their patients feel as comfortable as possible at night so patients can get an adequate amount of sleep. Clinical staff will be able to identify and follow through on patients' wishes with the guide of this tool. The evaluation will be a decrease in positive CAM scores.

Pre Data Collection

- Pre Data was collected by asking a total of 30 patients "Did you sleep well?" each morning. The researchers followed these patients from admission to discharge.

- Of these 30 patients, one patient had a positive CAM score on night one. During this night, the patient responded "NO" to "Did you sleep well?"
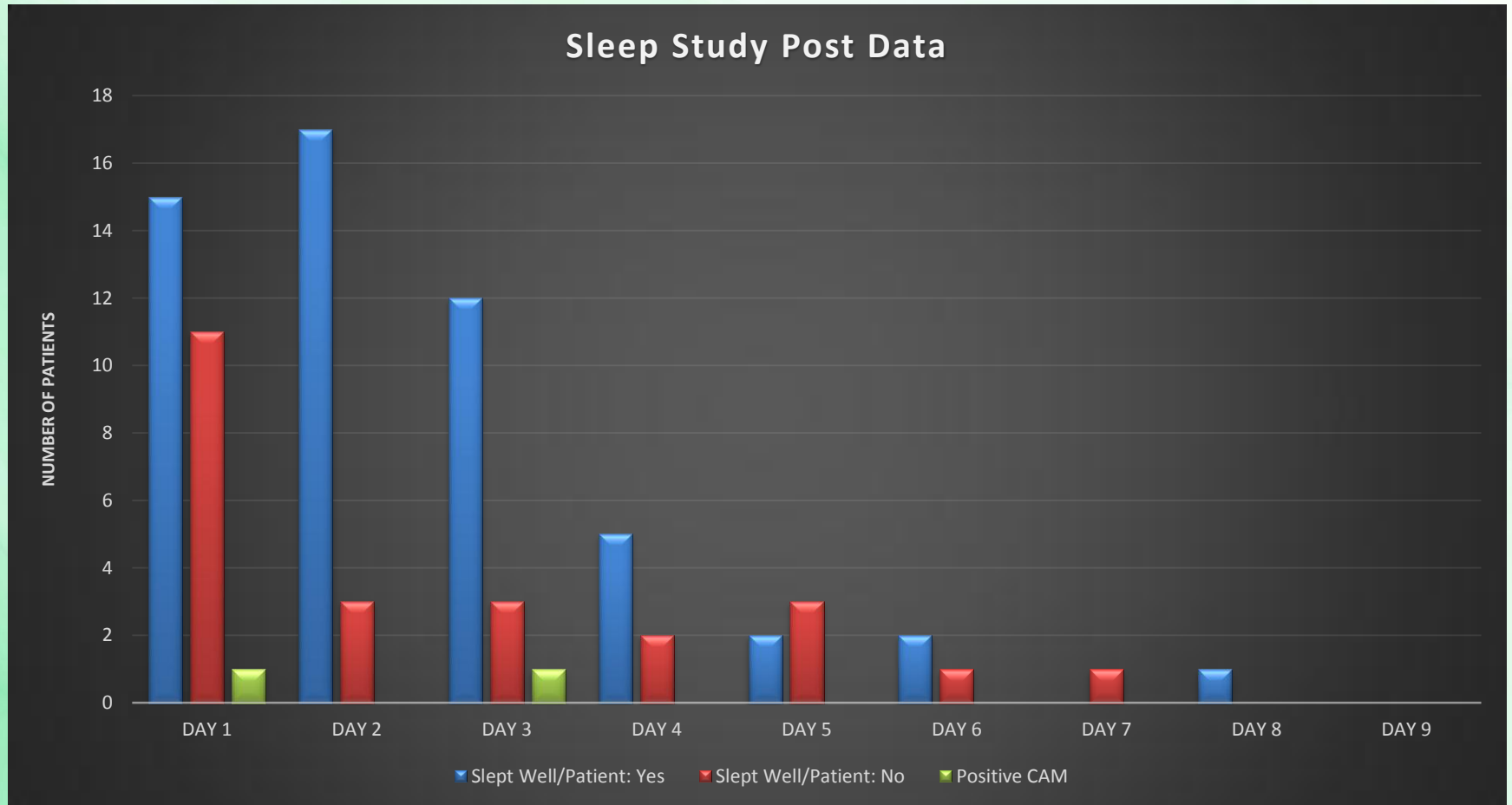
Pre Data

Sleep Study Pre Data
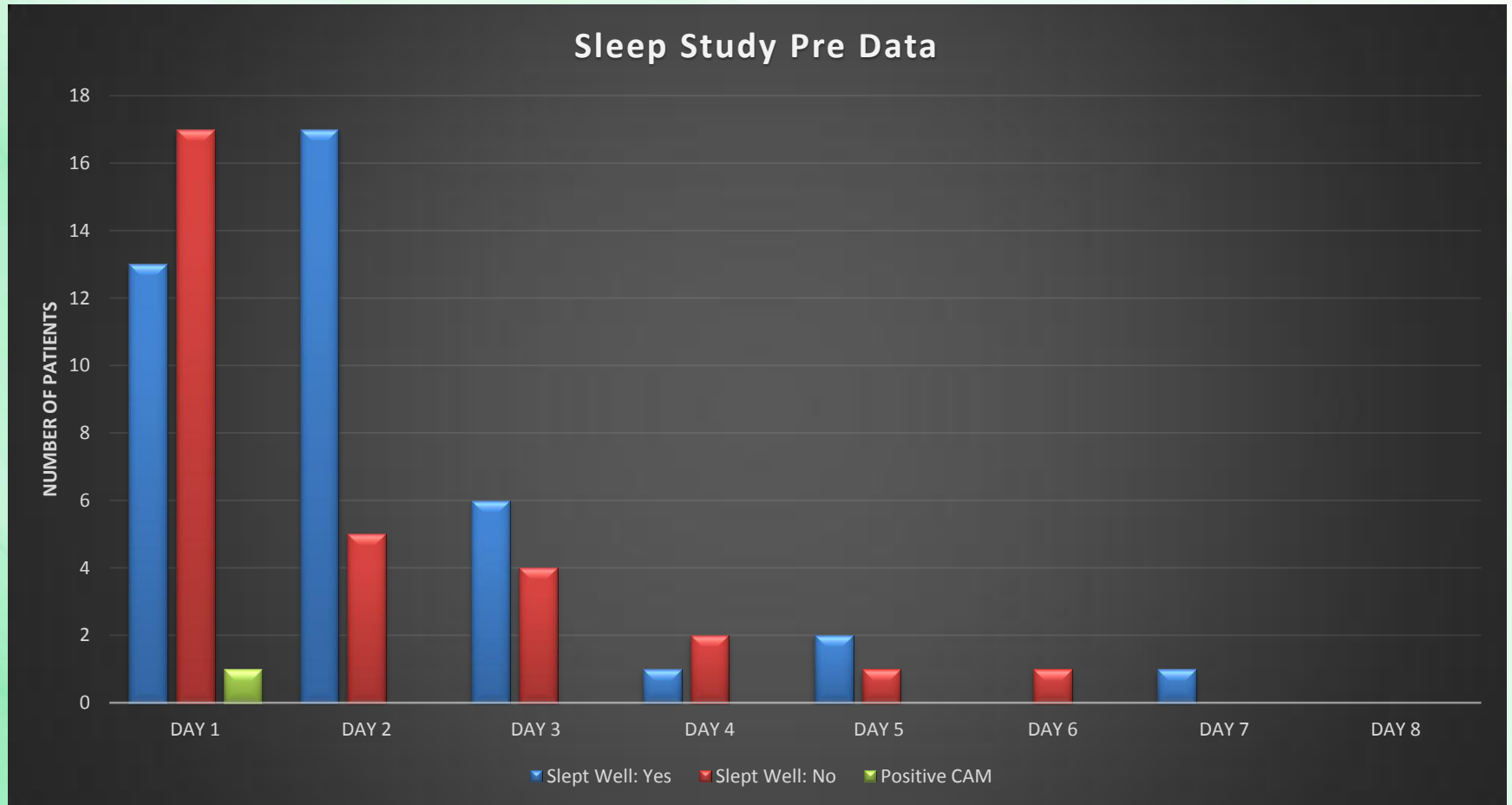
Post Data Collection

- Post data was collected by asking a total of 30 patients:
  - On admission, to complete a copy of the sleep hygiene menu to identify specific interventions that aid in sleep promotion
  - "Did you sleep well?" each morning from admission to discharge
  - To complete a follow-up evaluation of the interventions on the sleep hygiene menu each morning
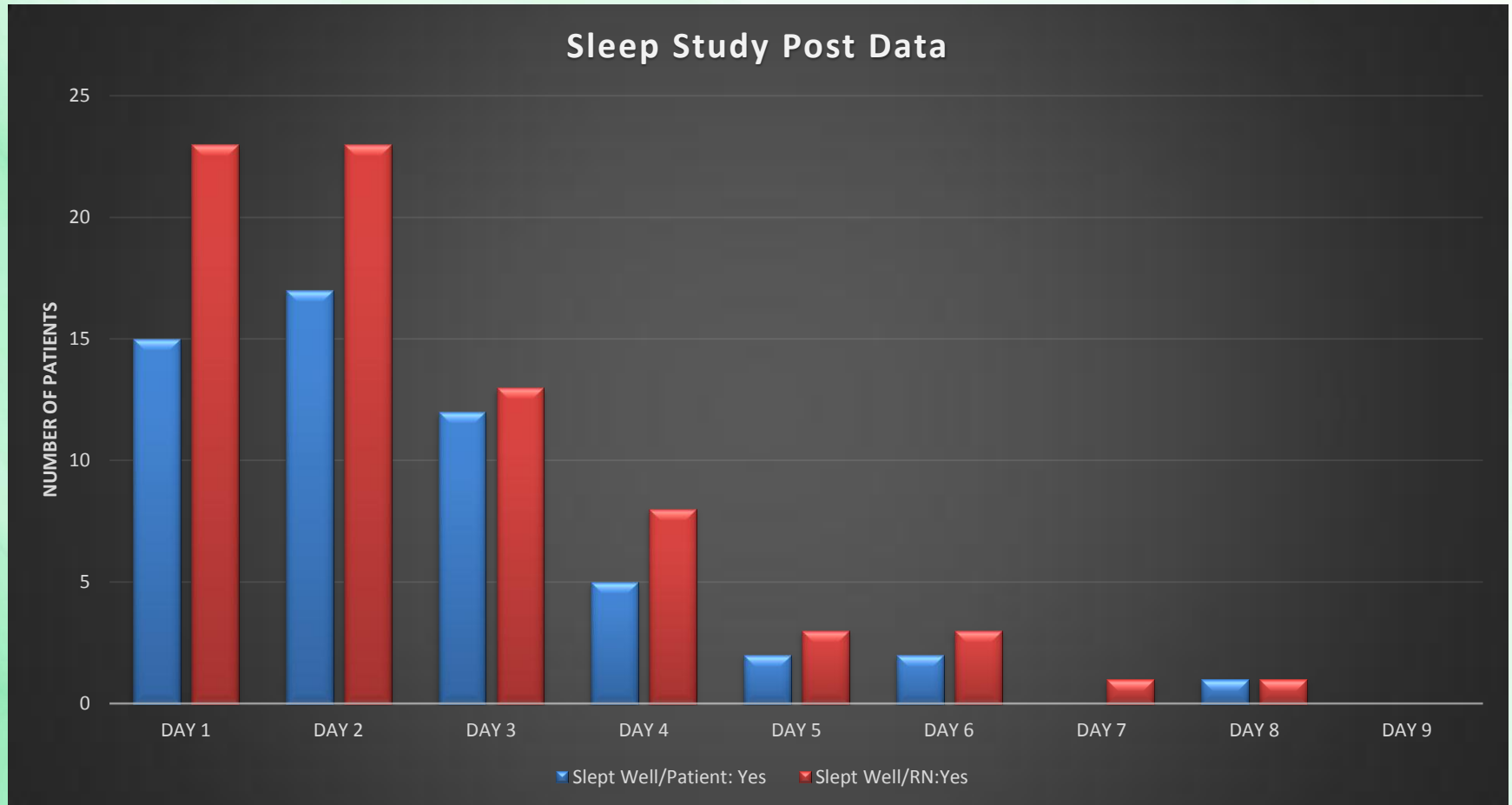
Post Data Collection

- RNs were then asked:
  - "Did your patient sleep well?" each morning from admission to discharge
  - To complete a follow-up evaluation of the sleep hygiene menu reflecting staff's interpretation of interventions
  - Researchers then assigned patients a positive or negative CAM score each night
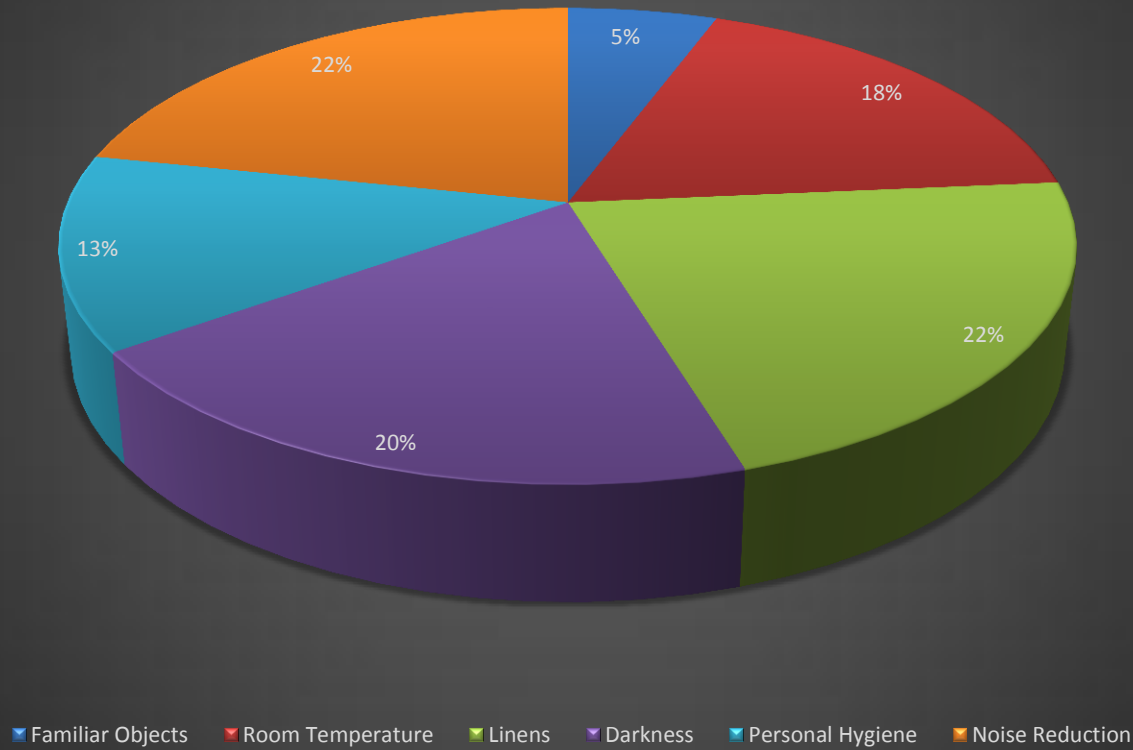
Post Data

Sleep Study Post Data

Post Data

Sleep Study Post Data

Post Data

Importance of Interventions

5% Familiar Objects
18% Room Temperature
22% Linens
20% Darkness
13% Personal Hygiene
22% Noise Reduction

Results

- RN's perception as to how well their patients sleep is overestimated. Differing perceptions causes an inability to identify interventions that may be needed to help promote sleep. This causes concern for effectively promoting sleep.

- By patients' second night, sleep greatly improved. As staff became familiar with patients' preferences and implemented the interventions, patients began achieving a greater night's sleep.

Results

- The researchers further examined the two positive CAM scores obtained during the post data collection.

- The first patient had a positive CAM score on day one. The patient was confused on admission; therefore, the researchers were unable to learn about the patient's preferences until night three. Staff and patient stated that the patient did not sleep well on day one. Every day after, patient and nurse stated patient slept well and all interventions were achieved. CAM score was negative the remainder of the patient's admission.

Results

- The second patient had a positive CAM score on day three. Each night, all interventions were achieved for this patient. Each night, patient and RN stated patient slept well. The positive CAM score was believed to be caused by pain medication per the RN and MD.

Implications for LVHN

- Decrease in delirium
- Improved patient satisfaction
- Shorter hospital stays

Strategic Dissemination of Results

- Inform stakeholders of results
- Collaborate with stakeholders to educate peers through presentation
- Develop hospital-wide education
- Begin additional pilot studies involving peers

Lessons Learned

- Further studies need to be done with larger sample sizes to be able to develop a trend in data.

- Peer education and involvement results in more accurate data.

- It is inconclusive whether sleep affects delirium.

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- Questions/Comments?

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