

Glasgow Come Scale

Vasantha Kalyani

Assistant Professor, Department of Nursing, All India Institute of Medical Sciences, Rishikesh, Virbhadr Road, Rishikesh, Uttarakhand 249201.

Abstract

Nursing assessment is one the important and needed skill for each nurse. In this assessment the assessment of critical ill patients with trauma, head injury and the altered level of consciousness is the critical to assess. Each nurse should have the skill to assess the patient immediately which will help to start the effective nursing care. The assessment of GCS not only in clinical care Nurse Educators also clearly explain the concept and train their students to assess the patients as adult and child.

Keywords: GCS; Neuro Assessment; Score; Coma.

Since it was first described, the GCS has become an integral part of clinical practice and research across the world.

Sir Graham Teasdale

Introduction

The GCS provides a practical method for assessment of impairment of conscious level in response to defined stimuli. The scale was described as assessment of coma and impaired consciousness in 1974 by graham Teasdale and Bryan Jennet.

This is a method to communicate about the level of consciousness of patients with an acute brain injury. The findings which get from the usage of this scale will guide us the initial decision making and monitor trends in responsiveness that are important in signaling the need for new actions .

Reprint Request: Vasantha Kalyani, Assistant Professor, Department of Nursing, All India Institute of Medical Sciences, Rishikesh, Virbhadr Road, Rishikesh, Uttarakhand 249201.

E-mail: vasantharaj2003@gmail.com

RECEIVED ON 15.12.2016, ACCEPTED ON 28.12.2016

Glasgow Come Scale

GCS is used to assess the responsiveness because this is assess the stimuli as shows the brain is working. The GCS assess the two aspects of consciousness.

- *Arousal or wakefulness:* This is the meaning that being aware of the environment.
- *Awareness:* This is the client can demonstrate an understanding of what has been said.

The 3-15 point scale assesses the client's level of consciousness of evaluating these behavioral responses.

1. Eye opening 1-4
2. Verbal response 1-5
3. Motor response 1-6

Eye Opening

Assessment of eye opening involves the evaluation of arousal (being aware of the environment)

Score 4 : eyes open spontaneously

Score 3 : eyes to open to speech

Score2 : eyes open in response to pain only

for example (apply painful stimuli at trapezilen)

Record 'e' if the Patient is Unable to Open her or his Eyes because of Swelling, Ptosis or a Dressing.

Steps for Procedure to Assess Eye Opening

- Explain the procedure to the patient.
- Ascertain the patient's acuity of hearing.
- Use patients known language (or) fluency.
- Check the patients notes for any medical condition that may affect the accuracy of the GCS (any previous history of neurological problem).
- Check if the patient open his eyes without the need to speak or touch then, if the patient does, the score is 4E.
- If the patient does not open their eyes, talk to them start with normal volume and speak louder if they open their eyes mark 3E.
- If the patient does not open their eyes to speech, administer a painful stimuli if the patient open their eyes for painful stimuli score as 2E.
- If there is no response from the patient then the score is '1'.

Eye Opening Response when the Patient is Sleeping

- If the patient was sleeping and it requires verbal stimulation to wake the patient up and check the patient maintain eye opening during the whole assessment the patient score is 4.
- If the patient is sleeping and requires verbal stimulation to wake up and then drifted back into sleep or drowsy and required frequent verbal stimuli stay awake, then the patient is scored as 3.
- If the patient is unable to open their eyes due to injury or edema then score as (1) nurses should document the reason for not opening the eyes.
- Patient with spontaneous eye opening may not indicate that the awareness component is intact (Example) patient who are in permanent vegetative state have spontaneous eye opening but not aware about the surrounding and they are not focusing.

Verbal Response

Score 5: Oriented.

Score 4: Confused.

Score 3: Inappropriate words.

Score 2: Incomprehensible sounds.

Score 1: no response both verbal and physical stimuli record D if the patient is dysphasia. T if the patient has a tracheal or tracheotomy tube in situ.

Steps of Procedure to Assess Verbal Response

- Explain the procedure to the patient.
- Ascertain the patient's level of vocalizing action.
- Use patient known language.
- Identify the ability of patient speaking any congenital problem and any neurological problems.
- Ask three questions regarding orientation as place, time and persons (names). Patient answered all three questions correctly mark score as 5V/5S.
- If the patient unable to answer consciousness of these questions (time, place, and names), may be there inattention is inherent. Mark score as 4V/4S. they can be marked as disoriented)
- If the patient has random or exclamatory articulated speech and has no sustained conversational exchange mark score as 3V/3S.
- If the patient moaning (no words) and groaning with or without external stimuli mark score as 2V/2S
- Patient does not make any sound even when painful stimuli then mark 1V/1S.

Special Considerations

- When the patient has tracheotomy, initiated or neurological problem, if they can write or shake and nod his/her head for orientation questions correctly mark score as IV/IS because there is no verbal response. Documented properly and details.
- When asking the place, nurse should start with country, city and then building don't ask the patient about bed no/ room no.
- Ask the patient about current year/month or season. Do not ask the date or day of the week.

Motor Response

Motor response assessment will determine the

patient's ability to obey a command and to localize, and to withdraw or assume abnormal body positions in response to painful stimuli.

This motor response is the most accurate indicator in predicting patients out come.

Score 6: Obey commands.

Score 5: Localizes to central pain.

Score 4: Withdraws from pain.

Score 3: Flexion to pain.

Score 2: Extension to pain.

Score 1: No response to painful stimuli.

Steps of Procedure to Assess Motor Response

- Explain the procedure to the patient.
- Use patients known or fluency language.
- Check the patient's medical condition visual acuity, hearing acuity and any neurological defect.
- Ask the patient to perform simple tasks as show me your thumbs or show one two fingers (for quadriplegic patients, ask the patient to smile, stick out their tongue, show their teeth. If they able to perform score as -6.
- Check the patient attempts to remove the score of painful stimuli by using hands or tries to move shoulder away from painful stimuli then score as-5.
- Check the patient tries to move hand or foot when painful stimuli applied to the fingers or toes then score as-4.
- Check the patient movement such as on elbows, wrists, and finger flexion and drawn on top of the chest when central pain is applied. Check both arms are adducted and closed to the chest wall. The score is as -3 abnormal flexion (decortications).
- Check the patient when central pain is applied patient will have elbow strengthened internal rotation of shoulders and flexion of the wrists and fingers both arms adducted and closed to the chest wall patient may have extension on feet when central pain is applied. then score is 2 as abnormal extension (Decerebaration).
- If the patient does not show any response score as-1.

Painful Stimuli

Painful stimuli in checking the motor response can

be considered as peripheral and central Peripheral pain is assessed by keeping pen or pencil in between two fingers at second and third pharangeal joints and apply pressure at lateral aspects.

Central painful stimuli are tested to assess the integrity of the higher centers of the brain such as brain stem and cerebral cortex. It should be applied to the core area that does not elicit a reflex such as sqzuee on the trapzeium muscle or pressure on the angle of joint. Sterna rub is also one of central painful stimuli which should be worried as is leaves bruises which could be misinterpreted as battery or abuse to patient.

- Nurses should understand that patient level of consciousness can be affected because of sedatives, hypnotics, paralytic agents or alcohol.
- This score helps the health professional to categorize the four possible levels for survival with a lower number indicating a more severe injury and a poor prognosis.

Mild 13-15.

Moderate 9-12.

Severe disability 3-8.

Vegetative state less then 3.

Moderate disability -12

Loss of consciousness greater than 30 minutes physical or cognitive impairments which may or may resolve.

Benefit from rehabilitation.

Severe disability 3-8.

Coma: unconsciousness.

No meaningful response.

No voluntary activities.

Vegetative state (less then 3).

Sleep wake cycles.

Arousal but no interaction with environment no localized response to pain.

Limitations of the Glasgow Coma Scale

The factors such as drug use, alcohol intoxication, shock or low blood oxygen can alter a patients level of consciousness. These factors lead to an inaccurate score on the GCS.

*Pediatric GCS***Table 1:** Glasgow coma score or PGCS

Infant <yr	Child 1-4 yr Eyes	Age4- adult
Open	Open	Open
To vice	To voice	To voice
To pain	To pain	To pain
No response	No response	No response
	Verbal	
Coos, babies	Oriented speaks, interacts social	Oriented and alert
Irritable cry, consolable	Confused speech, discontented consolable	To vice
Cries persistently to pain	Incomprehensible, agitated	To pain
Moans to pain		
No response	No response	No response
	Motor	
Normal spontaneous movement	Normal spontaneous movement	Follows commands
Withdraws to touch	Localizes pain	Localizes pain
Withdraws to pain	Withdraws to pain	Withdraws to pain
Decorticate flexion	Decorticate flexion	Decorticate flexion
Decorticate extension	Decorticate extension	Decorticate extension
No response	No response	No response

Conclusion

GCS which is one of the easiest methods to check the patient's neurological state nurses should practice and improve their skill in assessing the patients immediately. Nurses should document clearly what they have assessed

References

1. Teasdale G Knill-Jones R, van der Sande J. Observer variability in assessing impaired consciousness and coma, *J Neurol Neurosurg Psychiatry* 1978; 41:603-10.
2. Teasdale GM Jennett B. Assessment and prognosis of coma after to sum or not to sum lancet. 1983; 2:678.
3. Teasdale GM Murray L. "Erratum: Highly cited works in neurosurgery part-II the citation classics." *J Neurosurg*, 2014; 120:1252-57.
4. Phil Jevon, PGCE, BSc. RGN, is resuscitation officer/clinical skills lead.
5. Honorary clinical lecture, Manor Hospital Walsall. *Nursing times*, 104:29,28-29.
6. Jevon, P. head injury; Triage assessment, investigation and early management of head injury in infants, children and adults. 2007.