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Validity and Reliability of the Moline-Roberts Pharmacologic Sedation Scale[®]

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No conflicts of interest to disclose



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OBJECTIVES

- Describe the method used to establish validity and reliability of the Moline-Roberts Pharmacologic Sedation Scale[®] (MRPSS)
- Relate the value of the Moline-Roberts Pharmacologic Sedation Scale[®] to clinical practice.



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Magnet Hospital since 2000




Beacon Award for Critical Care Excellence



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Poudre Valley Health System

- Service area: Northern Colorado, Wyoming & Nebraska
- 4,200 employees, 778 providers & 800 volunteers





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History of MRPSS[®]


- Fall 1999
 - Original scale developed
 - Established validity and reliability
- Spring 2001
 - Revised for compliance with JCAHO definitions
- Fall 2007 - 2009
 - Scale revisions
 - IRB approved R/V study
 - Data collection/analysis


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MRPSS[®] Conceptual Blueprint


Presentation	Stimulus		Response	Sedation
	Auditory	Tactile		
Awake, aware, alert Airway and ventilation adequate	None	None	Spontaneous, sustained interaction	1 None to minimal
Restful, drowsy, dozing, lightly sleeping Airway and ventilation adequate	Soft voice or Ambient noise	None or Light touch, rubbing, or tapping	Sustained interaction	2 Anxiolysis
Sleeping Airway and ventilation adequate	Soft to normal Voice	Light touch, rubbing or tapping	Limited or brief Interaction	3 Moderate Sedation
Sleeping Airway and ventilation adequate	Normal to loud voice	Light touch, rubbing or tapping	Follows simple commands	4 Moderate Sedation
Sleeping Airway and/or ventilation may be impaired	Loud Voice	Persistent or noxious	Purposeful or Non-purposeful movement.	5 Deep Sedation
Sleeping Airway and/or ventilation grossly impaired	Loud voice	Noxious	No response Unarousable	6 General Anesthesia


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Content Validity


- Multidisciplinary expert panel
- Questionnaire packet included
 - Letter requesting participation
 - Conceptual blueprint representing the continuum of sedation
 - Sedation definitions
 - Revised scale and Instructions for use
 - Questionnaire
 - Return envelope
- 72% Response Rate

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Content Validity

ID #	Blue print reflects concept	Presentation	Auditory	Tactile	Response	Scale reflects blueprint	Profession
1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	3
3	1	1	1	1	1	1	1
4	1	1	1	1	1	1	3
5	1	1	0	1	1	1	2
6	.	1	1	1	1	1	1
7	1	1	1	1	1	1	3
8	1	1	1	1	1	1	3
9	1	1	1	1	1	1	1
10	1	1	1	1	1	1	2

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No = 0
Yes = 1
Period = No response


Physician=1
RN=2
Pharmacist =3

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Interrater Reliability


- Study design
 - Randomized assignment
 - 3 to 4 assessments per patient
- Setting
 - 260 bed non-profit hospital
 - Inpatient and outpatient units included
 - Primarily peri-operative and peri-procedural patients


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Interrater Reliability


- Sample
 - 86 patients with 329 assessments
- Two nurse raters
 - One nurse provided stimulus if needed
 - Simultaneous evaluation
 - Blinded documentation


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Interrater Reliability

Component	Cohen's Kappa	p value
Presentation	76.4% - 92.2%	<.001
Auditory Stimulus	81.0% - 87.8%	<.001
Tactile Stimulus	77.2% - 88.5%	<.001
Response	84.1% - 97.4%	<.001
Sedation Level	90.6% - 97.0%	<.001


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Statistical analysis provided by Janet Houser PhD,RN



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Internal Consistency

- Cronbach's alpha scores ranged from .983-.996
 - The instrument demonstrated high internal reliability.


Statistical analysis provided by Janet Houser PhD,RN



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Moline-Roberts Pharmacologic Sedation Scale®


Presentation	Auditory Stimulus	Tactile Stimulus	Response	Sedation
Awake, aware, alert Airway and ventilation adequate	None	None	Spontaneous, sustained interaction	1 None to Minimal
Restful, drowsy, dozing, lightly sleeping Airway and ventilation adequate	Soft voice or ambient noise	None or light touch, rubbing or tapping	Sustains interaction	2 Anxiolysis
Sleeping Airway and ventilation adequate	Soft to normal voice	Light touch, rubbing or tapping	Limited or brief interaction	3 Moderate Sedation
Sleeping Airway and ventilation adequate	Normal to loud voice	Light touch, rubbing or tapping	Follows simple commands	4 Moderate Sedation
Sleeping Airway and ventilation may be impaired	Loud voice	Intense to noxious	Purposeful response or non-purposeful movement	5 Deep Sedation
Sleeping Airway and ventilation likely impaired	Loud voice	Noxious	No response, unarousable	6 General Anesthesia



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Value to Clinical Practice


- Sedation proceeds respiratory depression
 - Sedation is a continuum
 - Many agents induce/potentiate sedation
- Scale provides standardized method for
 - Assessing patients
 - Monitoring and trending over time
 - Communicating across the care continuum



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Value to Clinical Practice


- Advantages for staff
 - Color coded
 - Used throughout system
 - Incorporated into order sets
- Limitations
 - Tool – not decision maker
 - Not for patient with neurologic impairment



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Guiding Nursing Practice


- Two additional columns were added to the scale to guide nursing action:
 - Attentive Pain Management
 - Moderate Sedation/Analgesia
- Specific to PVHS organization
- Content not part of the research study
- Video created to ensure consistent education
 - Concept of scale
 - Patient scenarios
 - Validation scenarios



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Guiding Nursing Practice

- Scale instructions include
 - Purpose of tool
 - How to use tool
 - Limitations of tool
 - Information to assist in assessing patient risk
 - Physiologic factors
 - Pharmacologic factors
 - Monitoring factors
 - Sleep factors


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Moline-Roberts Pharmacologic Sedation Scale
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Questions

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