An audit of sleep and sedation practices in UK Intensive Care Units

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Background

✦ Sleep disruption may be associated with the delirium in ICU patients (Bellapart and Boots 2012; Trompeo et al 2011), which in turn has been shown to be associated with worse morbidity (van den Boogaard et al 2012) and mortality (Ely et al 2004)

✦ Noise, nursing or medical procedures, presence of staff / family & mechanical ventilation are extrinsic barriers to patient sleep in ICU (Elliot et al 2010;Hopper et al 2015)

✦ Insufficient training , lack of structured protocol and nurses failure to prioritise patient sleep makes the provision of sleep for the ICU patient impossible (Nesbitt 2013)

✦ The use of non-pharmacological for sleep promotion are suggested as an alternative to pharmacological interventions to prevent ICU delirium (Hu et al 2015).

✦ Little is known regarding nurses' role in ICU sleep and sedation practices.

✦ The aim of this study was to undertake an audit of existing practice to determine current sleep and sedation practices in ICUs across the United Kingdom

Methods

✦ An audit of 150 intensive care units across England, Wales and Northern Ireland was conducted as part of a larger international study

✦ The questionnaire was adapted from a previous version developed in the Netherlands (Hofhuis et al 2012)

✦ Circulated via the Critical Care National Network Nurse Lead (CC3N)via as a Survey Monkey web to 150 ICUs in in England, Wales and Northern Ireland.

✦ Data was analysed in Excel

✦ Service evaluation which did not require ethics approval
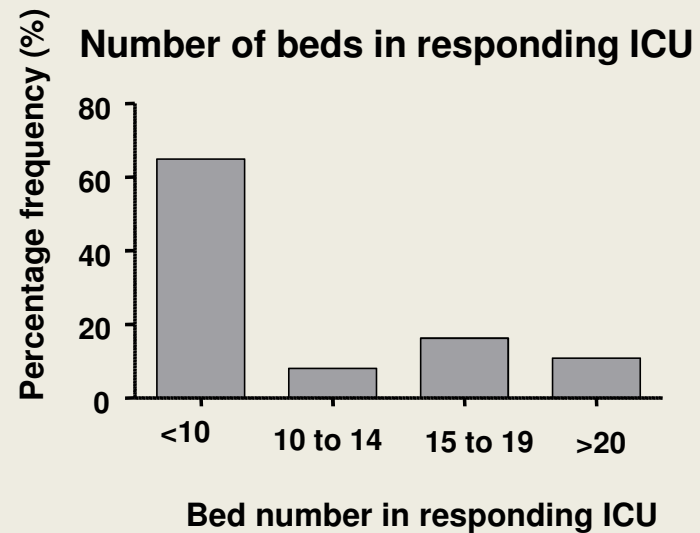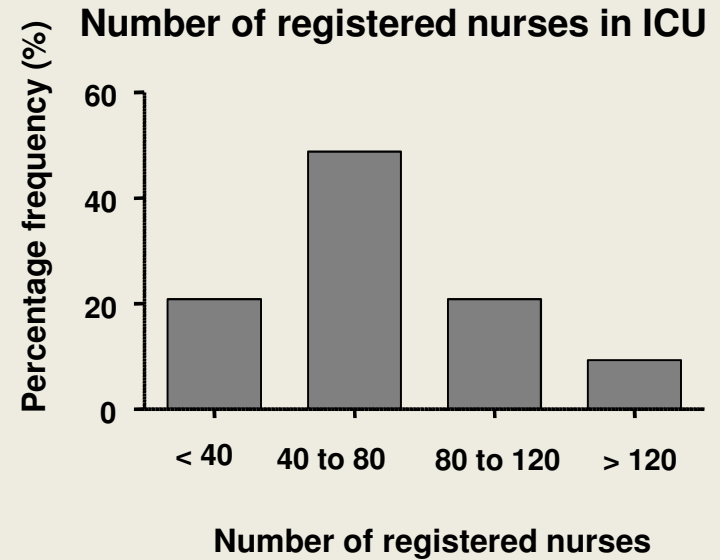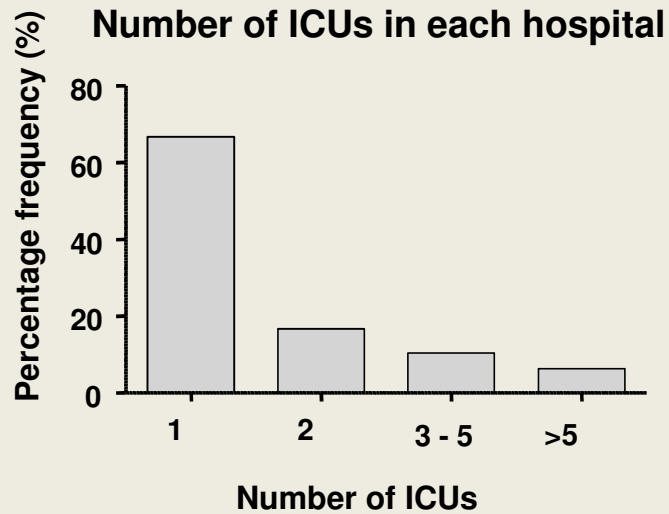
Questionnaire

Four Domains:

✦ Characteristics of sleep

✦ Sleep and sedation practices

✦ Non-pharmacological and pharmacological interventions to improve sleep

✦ Autonomy & influence of nurses on sleeping practices in the ICU

Hofhuis J.G.M., Langevoort G., Rommes J.H. and Spronk P.E. (2012) Sleep disturbances and sedation practices in the intensive care unit–A postal survey in the Netherlands. *Intensive and Critical Care Nursing,* 28, 141—149

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Results

✦ Forty-eight ICU's responded to the questionnaire (32% response rate)

✦ Hospitals were mainly University affiliated (47%) or Community / teaching hospitals (36%)

✦ Majority of units were Medical and Surgical ICUs (78%)

✦ ICUs were mainly Intensivist led (89%)

Characteristics of participating hospitals

Number of ICUs in each hospital

Number of registered nurses in ICU

Number of beds in responding ICU

Sleep identifiers used to identify whether a patient is sleeping in the ICU

Rank (most commonly used = 1, least = 11)	Sleep identifier	Frequency
1	Lying quiet with closed eyes	40
2	Decreased blood pressure	34
3	Respiration slow and regular	28
4	Decreased pulse	27
5	Snoring	26
6	Decreasing heart-beat	25
7	Decreasing respiratory rate	23
8	Unintentional muscle movements	13
9	Very slow respiratory rate	4
10	Respiration slow, irregular and shallow	1
11	Increased blood pressure	1
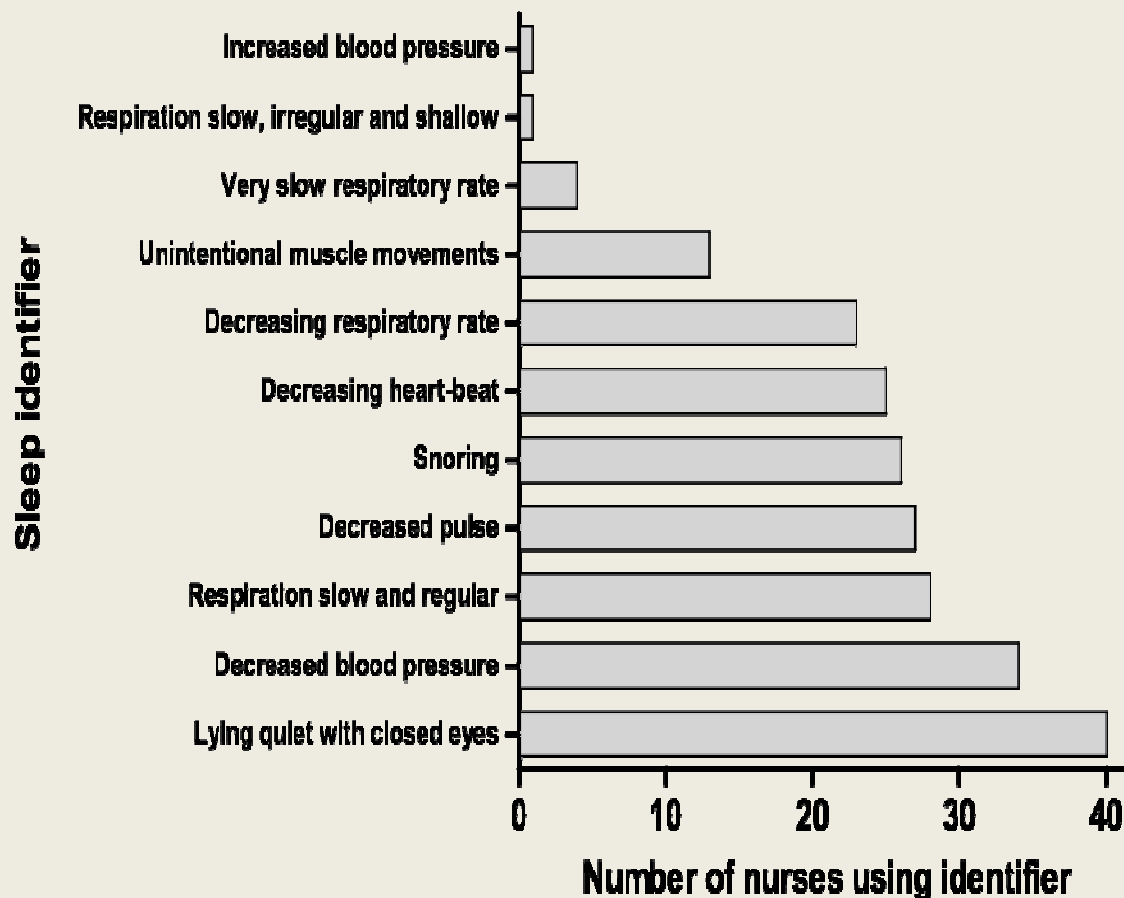
Do you pay attention to non-pharmacological intervention to improve sleep?

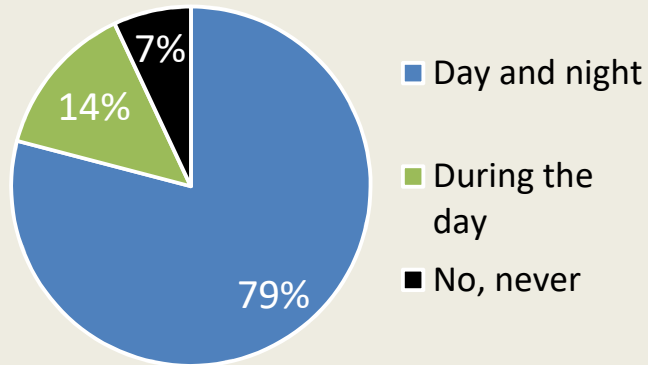| Noise						
Rank (1 = most used, 7 = least)	Intervention	1. Never (%)	2. Seldom (%)	3. Frequently (%)	4. Often (%)	5. Routinely (%)
1	Reducing ICU staff noise	0.0	2.2	22.2	28.9	**46.7**
2	Reducing nursing interventions at night	2.2	22.2	17.8	28.9	**28.9**
Environment						
1	Delaying routine blood work until morning	0.0	11.1	13.3	13.3	**62.2**
2	Providing a visible clock	2.1	10.4	12.5	14.6	**60.4**
Light						
1	Room lights off	0.0	2.1	4.2	14.6	**79.2**
2	Curtains closed	10.6	19.1	12.8	8.5	**48.9**

Sleep assessment

KEY:

1. Do you consider patient's sleeping preferences?

2. Do you ask re sleep problems / medications?

3. Do you use a sleep-questionnaire in your ICU?

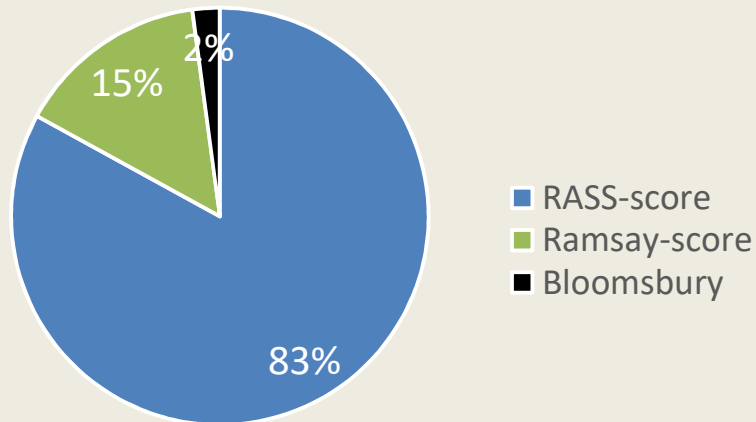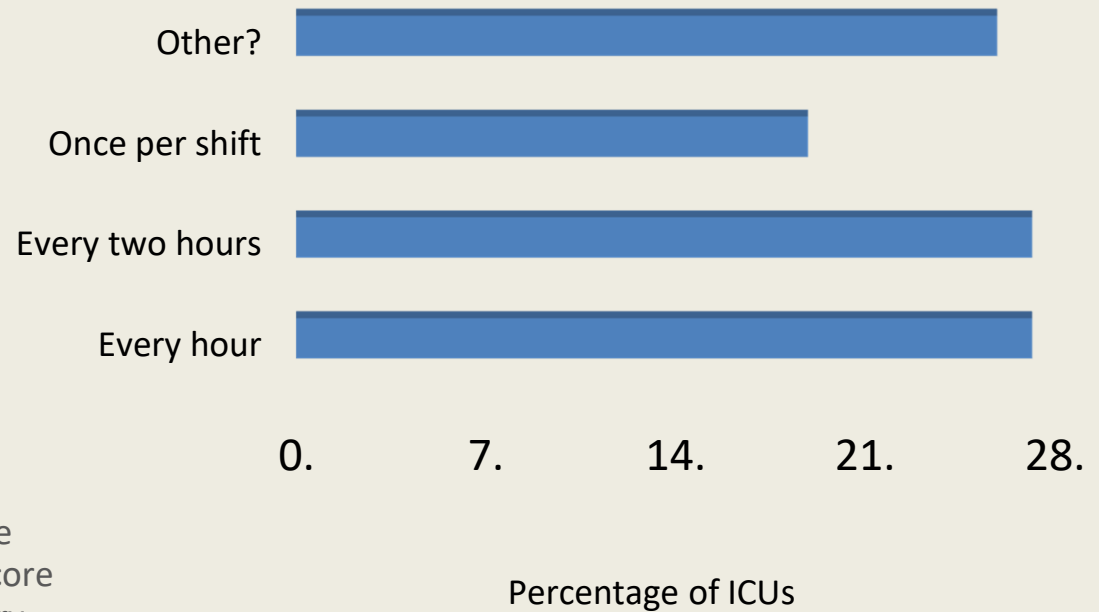4. Consult other disciplines when patient sleeping poorly?
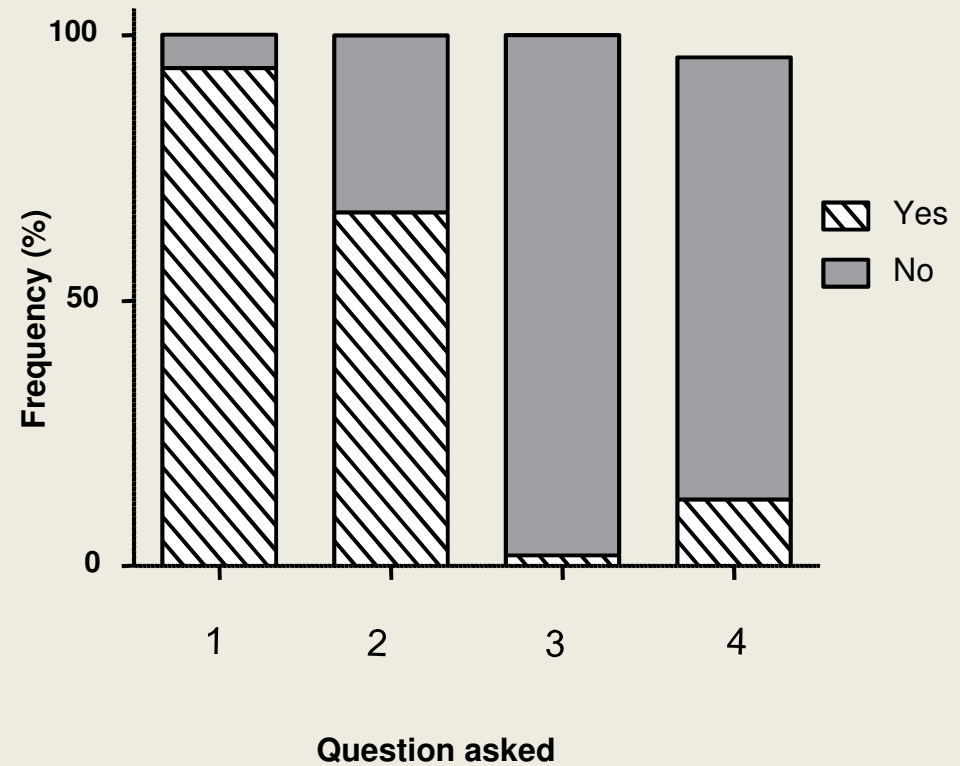
Sedation scoring

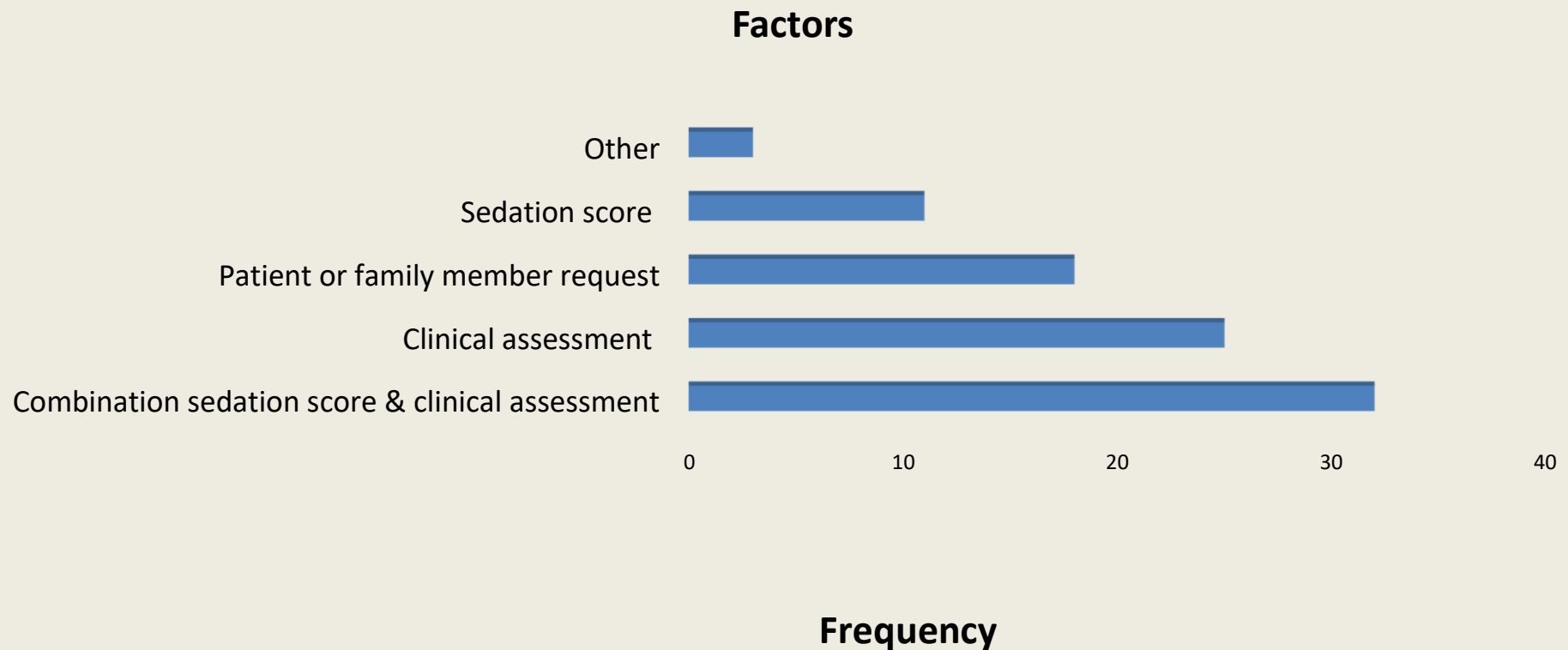## Do you target sedation to a score?

- 79% Day and night
- 14% During the day
- 7% No, never

Which sedation score do you use in your ICU?

- 83% RASS-score
- 15% Ramsay-score
- 2% Bloomsbury

How often are you using a sedation score in your ICU?

Other?
Once per shift
Every two hours
Every hour

0.   7.   14.   21.   28.

Percentage of ICUs
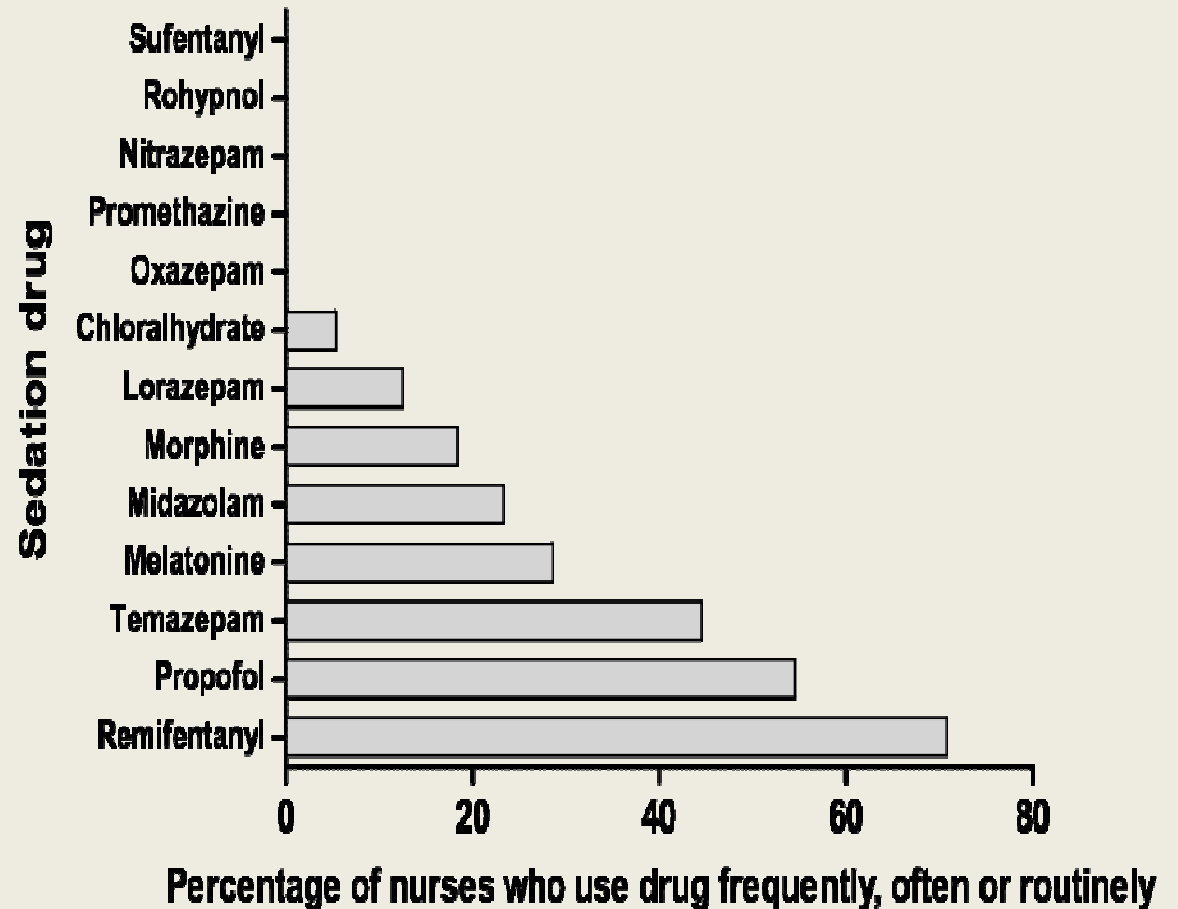
Decisions regarding sleep medication
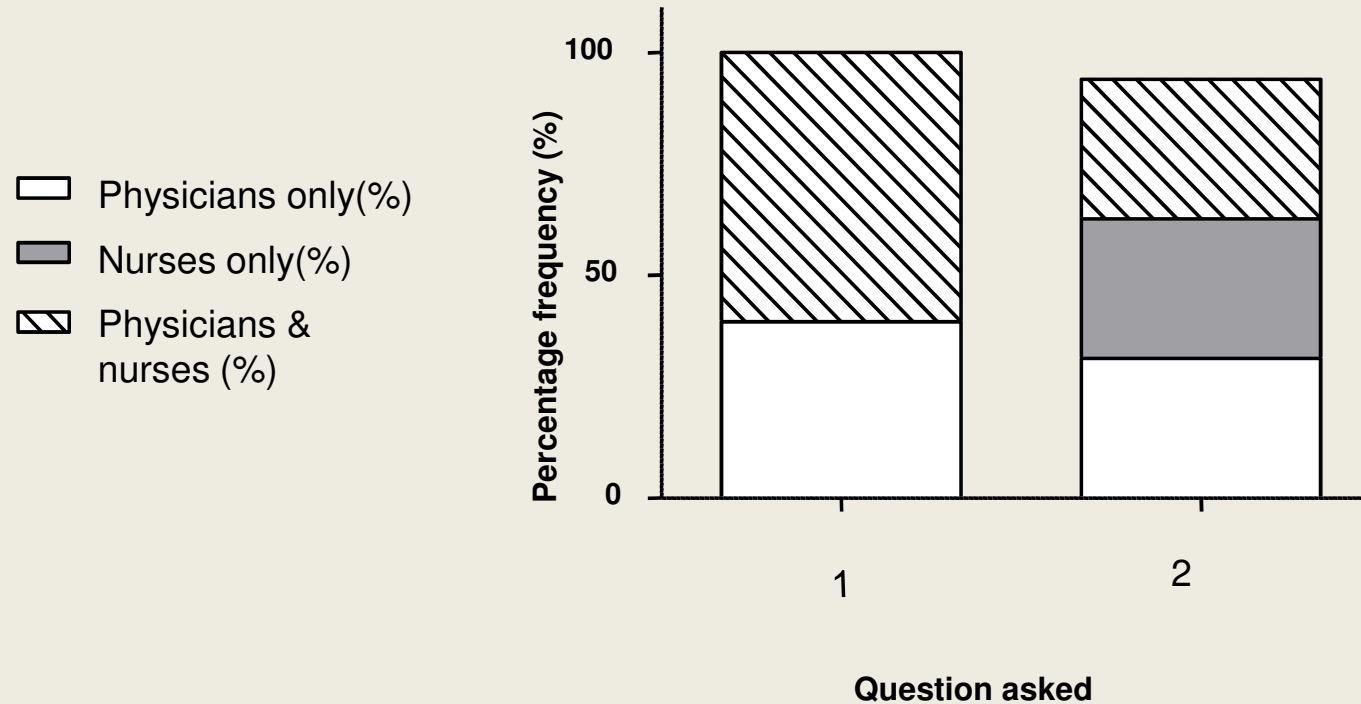
KEY:

1. Who decides sleep medication prescription?

2. Who determines the efficacy of sleep medication?

Which of the following medications do you use for sleep?

| Drug	3. Frequently (%)	4. Often (%)	5. Routinely (%)
Remifentanyl	**45.8**	16.7	8.3
Propofol	**36.4**	11.4	6.8
Temazepam	**28.9**	11.1	4.4
Oxazepam	0	0	0
Promethazine	0	0	0
Lorazepam	10	2.5	0
Nitrazepam	0	0	0
Rohypnol	0	0	0
Chloralhydrate	5.3	0	0
Melatonine	21.4	7.1	0
Midazolam	16.3	4.7	2.3
Sufentanyl	0	0	0
Morphine	10.5	2.6	5.3

Nursing autonomy & decision making

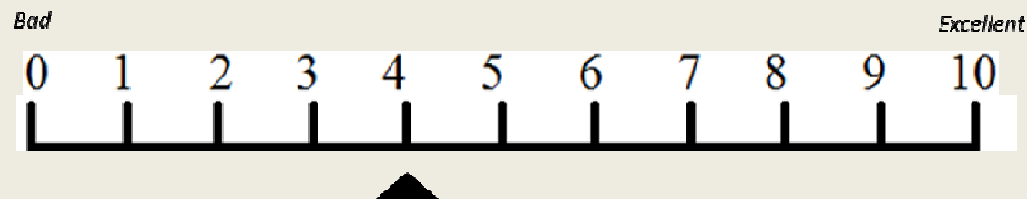How would you rate nursing autonomy regarding sleep and sedation practices of the ICU patient?

Dependent   Independent

0   1   2   3   4   5   6   7   8   9   10
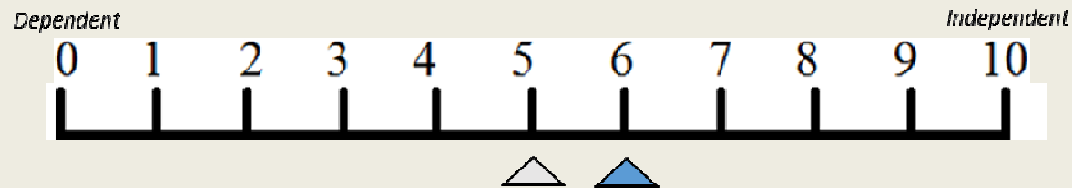
How often do nurses influence decisions regarding sleep management in ICU patients?

Never   Always

0   1   2   3   4   5   6   7   8   9   10
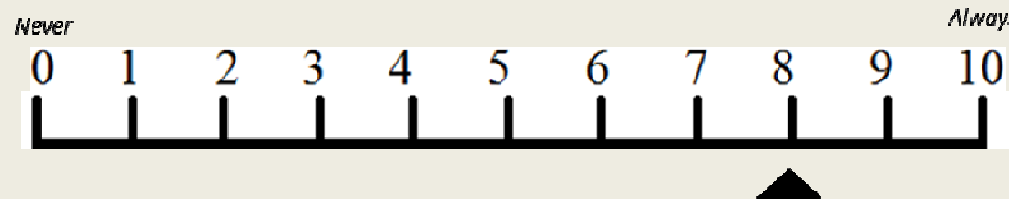
How would you rate sleep quality of the average patient in your ICU?

Bad   Excellent

0   1   2   3   4   5   6   7   8   9   10

△ Mode

△ Median

▲ Mode/median

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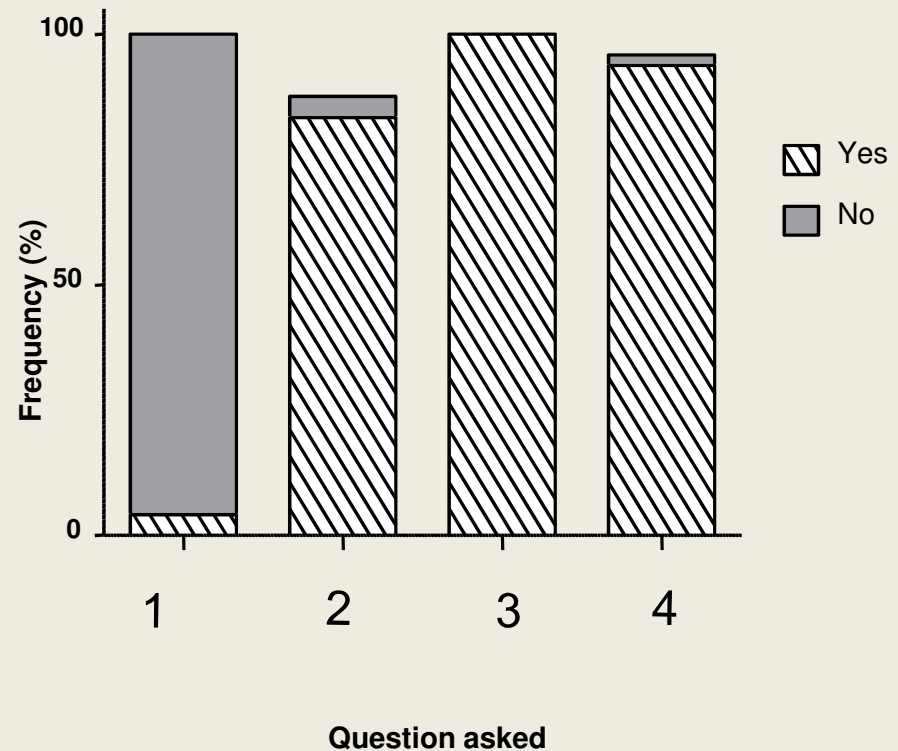at Queen's University
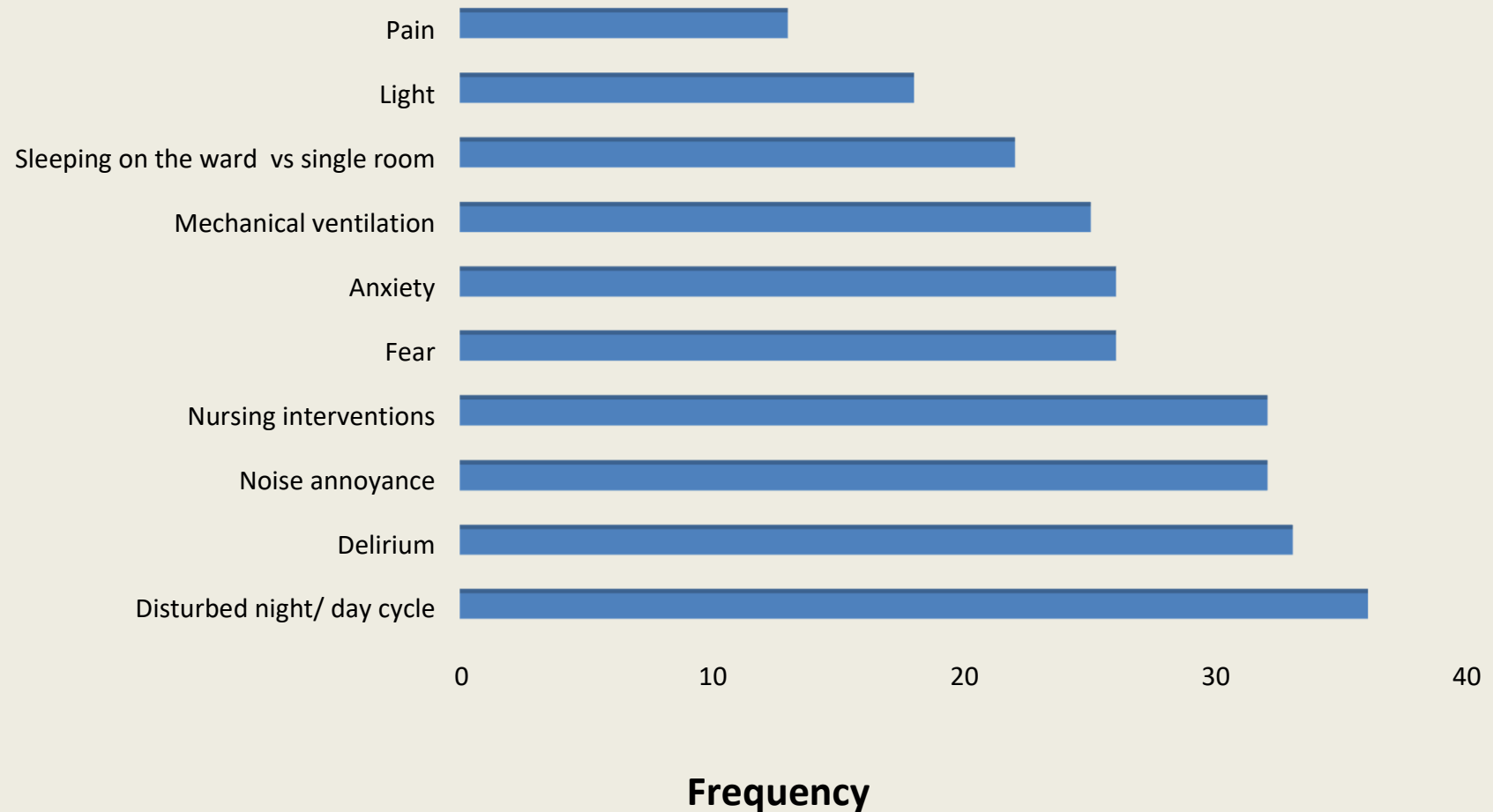
Sleep protocol and research

KEY:

1. Does your ICU have a sleep protocol?

2. Would you like to see a protocol implemented?

3. Do you feel a study assessing sleep interventions is important?

4. Do you think your ICU would take part in a sleep study?

Conclusion

✦ There is a need for further research to understand the challenges to enhancing sleep and sedation practices in ICU

✦ A range of non-pharmacological strategies need to be explored with a particular focus on those that promote quality/depth/length of sleep

✦ Factors supporting and hindering the implementation of extrinsic strategies to reduce sleep need to be understood to improve practice

Acknowledgements

✦ Jose Hofhuis, Gerdien Langevoort, Johannes Rommes and Peter Spronk for use of Nordic sleep Survey Questionnaire

✦ BACCN National Board for supporting study

✦ Angela Himsworth (Chair CC3N) for liaising and co-ordinating survey

✦ CC3N members   and Lead Nurses for distribution, completion and follow up of questionnaires