

## **Supplemental digital content**

Differential perceptions of noninvasive ventilation in  
intensive care among medical caregivers,  
patients, and their relatives: A multicenter prospective study  
- The PARVENIR study –

### **Supplemental digital content - Text**

- **Nurse questionnaire**
- **Physician questionnaire**
- **Patient questionnaire**
- **Relative questionnaire**

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## **Online only text**

### **Nurse and physician questionnaire**

*Each item relative to NIV perception was scored from 1 to 10 (with "1" corresponding to "not at all" or "never" and "10" corresponding to "certainly" or "always").*

***"A 60-year-old male is admitted to your ICU for acute respiratory failure. At ICU admission, he is polypneic, sweating with cyanosis and tachycardia. Given the initial severity, noninvasive ventilation (NIV) is started. You are the nurse/physician in charge of this patient."***

#### Questions relative to NIV start in ICU:

- 1- You are willing to care for this patient
- 2- You feel competent to provide NIV
- 3- You feel anxious about caring for this patient with NIV
- 4- NIV will be useful for this patient
- 5- The care of this patient will be excessively time-consuming
- 6- NIV is an effective treatment
- 7- NIV is a stressful treatment for the patient
- 8- NIV is a traumatic experience
- 9- NIV will cause this patient to suffer
- 10- You feel valuable or proud to provide NIV to this patient

#### Questions relative to the first NIV session in ICU:

- 11- You plan to set up NIV with different masks
- 12- You plan to set up NIV with different sizes of masks
- 13- You protect the nose bridge of the patient
- 14- You plan to set up NIV with different sling models
- 15- You tie the hands of the patient
- 16- You explain NIV principles to the patient
- 17- You explain to the patient why he is receiving NIV

- 18- You explain to the patient the consequences of NIV failure
- 19- You explain to the patient the expected sensations of being on NIV
- 20- You start the first NIV session alone
- 21- You start the first NIV session with the referral physician (or "nurse" for physician's questionnaire)
- 22- You apply the written NIV procedure

#### Questions relative to NIV tolerance in ICU:

- 23- Have you ever provided NIV to a patient who refused it?
- 24- Have you ever stopped providing NIV on your own initiative due to a patient's low tolerance?
- 25- Have you ever provided NIV longer than it was prescribed (or "initially decided" for physician's questionnaire)?
- 26- Have you ever regretted not trying NIV for a patient with acute respiratory failure who has been intubated?
- 27- Have you ever had the feeling that you have persevered with NIV for a patient who should have been intubated earlier?
- 28- Have you ever experienced potential adverse effects from NIV?
- 29- Do you think NIV-related adverse effects are:

benign     mild     severe     very severe

#### Questions relative to NIV duration in ICU:

- 30- In your opinion, what is the maximum acceptable duration of a NIV session?  
 <30min     30-60min     1-2 hrs     2-3 hrs     >3 hrs
- 31- In your opinion, what is the maximum cumulative duration of NIV acceptable per day?  
 <2h     2-6h     6-12h     12-18h     18-24h
- 32- In your opinion, the prescribed NIV duration is  
 much lower than     lower than     equal to     longer than     much longer than  
...the effective duration done by the patient.

Questions relative to your NIV perception:

- 33- Have you ever tried NIV yourself?  
 Yes                       No
- 34- If yes, did you find it pleasant?
- 35- Do you think that NIV is an aggressive therapy?
- 36- Would you agree to receiving NIV if you needed it?
- 37- Would you provide NIV to your relatives if required?
- 38- Compared to its adverse effects, the benefits of NIV  
 much higher  higher  equal  lower  much lower
- 39- In a general sense, do you regret providing NIV?

40- Could you describe in your own words what your perception of NIV is?

Specific data

- 41- Gender  
 male                       female
- 42- Age
- 43- Year of graduation as a nurse (or “medical grade” for physicians questionnaire)
- 44- You have been working in the participating unit for  
 <6 months    <1 year    <2 years    2-5 years    >5 years
- 45- You have been working in ICU for  
 <1 year    <1-3years    3-5years    5-10years  
 >10years

### ***Patient questionnaire:***

*For easier comprehension by the patient, the terms “ventilation with the mask” or “mask ventilation” were used throughout the questionnaire to designate noninvasive ventilation*

*Each item relative to NIV perception was scored from 1 to 10 (with “1” corresponding to “not at all” or “never” and “10” corresponding to “certainly” or “always”).*

- 1- Do you remember having received mask ventilation during a previous hospital stay?
- 2- Before starting mask ventilation, explanations were provided
- 3- If yes, these explanations were clear and comprehensive
- 4- These explanations were quite worrying
- 5- I was forced to receive ventilation with the mask
- 6- Did you understand the potential consequences of mask ventilation failure?
- 7- The mask ventilation sessions were pleasant
- 8- Did you experience shortness of breath during the mask ventilation session?
- 9- Did you have face pain during the mask ventilation session?
- 10- Were you disturbed by the mask leaking during the mask ventilation session?
- 11- Were you disturbed by the noise of the ventilator during the mask ventilation session?
- 12- Were you disturbed by the alarm noise during the mask ventilation session?
- 13- Were you thirsty during the mask ventilation session?
- 14- Were you worried about not making yourself correctly understood?
- 15- Did you manage to sleep during the ventilation with the mask?
- 16- Do you think that the mask ventilation session/s was/were too long?
- 17- Do you regret having received mask ventilation?
- 18- Did you need to have someone at the bedside during mask ventilation?
- 19- Ventilation with the mask was a pleasant experience
- 20- Do you think mask ventilation is a traumatic experience?
- 21- Mask ventilation is an effective treatment
- 22- Do you think mask ventilation is a stressful treatment?
- 23- Did you speak about the mask ventilation with your relatives?
- 24- Would you agree to having mask ventilation again if needed?
- 25- Would you agree to having mask ventilation at home if needed?
- 26- Did you feel heard by the caregivers during the mask ventilation session?
- 27- Compared to its adverse effects, do you think that the benefits of mask ventilation are  
 much higher  higher  equal  lower  much lower
- 28- Could you describe in your own words what your perception of mask ventilation is?
- 29- Are you or have you ever been a smoker?
- 30- If yes, are you:  
 an active smoker  a former smoker

### **Relative questionnaire:**

*For easier comprehension by the relative, the terms “ventilation with the mask” or “mask ventilation” were used throughout the questionnaire to designate noninvasive ventilation*

*Each item relative to NIV perception was scored from 1 to 10 (with “1” corresponding to “not at all” or “never” and “10” corresponding to “certainly” or “always”).*

- 1- Did you know of mask ventilation before this hospital stay?
- 2- Explanations regarding mask ventilation were provided
- 3- If yes, these explanations were clear and comprehensive
- 4- These explanations were quite worrying
- 5- Did you understand the potential consequences of mask ventilation failure?
- 6- Did you feel the mask ventilation sessions were pleasant for your next of kin?
- 7- Did you feel your next of kin was suffering during the mask ventilation session?
- 8- Did you feel your next of kin was shortness of breath during the mask ventilation session?
- 9- Did you feel your next of kin was in pain during the mask ventilation session?
- 10- Did you feel your next of kin was worried about not making themselves correctly understood?
- 11- Do you think that the mask ventilation session/s was/were too long?
- 12- Did you feel your next of kin needed to have someone at the bedside during the mask ventilation session?
- 13- Mask ventilation seemed to be a pleasant experience
- 14- Mask ventilation seemed to be an effective treatment
- 15- Did you feel that your next of kin was anxious during the mask ventilation?
- 16- Do you think mask ventilation is a stressful treatment?
- 17- Do you think mask ventilation is a traumatic experience?
- 18- Did your next of kin talk about the mask ventilation with you?
- 19- Do you regret that your relative received mask ventilation?
- 20- Would you agree to have mask ventilation if you needed it?
- 21- Compared to its adverse effects, do you think that the benefits of mask ventilation seem to be  
 much higher  higher  equal  lower  much lower
- 22- Could you describe in your own words what your perception of mask ventilation is?
- 23- Gender  
 male  female
- 24- Age
- 25- Have you ever needed to receive mask ventilation?
- 26- Are you or have you ever been a smoker?
- 27- If yes, are you:  
 an active smoker  a former smoker

**Table1: Perceptions of noninvasive ventilation (NIV) among intensive care unit (ICU) physicians, nurses, patients and their relatives.**

	ICU Physicians	ICU nurses	Patients	Relatives
“NIV is an effective treatment”	8 (6-9)	8 (6-9)	6 (2-9)	3 (2-9) * <sup>£</sup>
“NIV is pleasant to use”	5 (3-7)	3 (1-5) * <sup>\$</sup>	5 (2-7)	3 (1-5) *
“NIV is a traumatic experience”	5 (4-6)	6 (5-8)	3 (1-6) * <sup>£</sup>	4 (1-7) * <sup>£</sup>
“I received/provided explanations on the consequences of NIV failure”	6 (2-9)	5 (2-8)	2 (1-5) * <sup>£</sup>	2 (1-6) * <sup>£</sup>
“NIV is a stressful treatment”	7 (6-8)	8 (6-9)	3 (1-6) * <sup>£</sup>	4 (2-7) * <sup>£</sup>
"I regret having provided/received NIV"	1 (1-3)	3 (1-5) * <sup>\$</sup>	1 (1-3)	1 (1-2) <sup>£</sup>

Items were similar within the four respondent categories (i.e. Physicians, nurses, patients, relatives). All items were scored on a scale from 1 to 10 (with “1” corresponding to “not at all” and “10” corresponding to “yes extremely”).

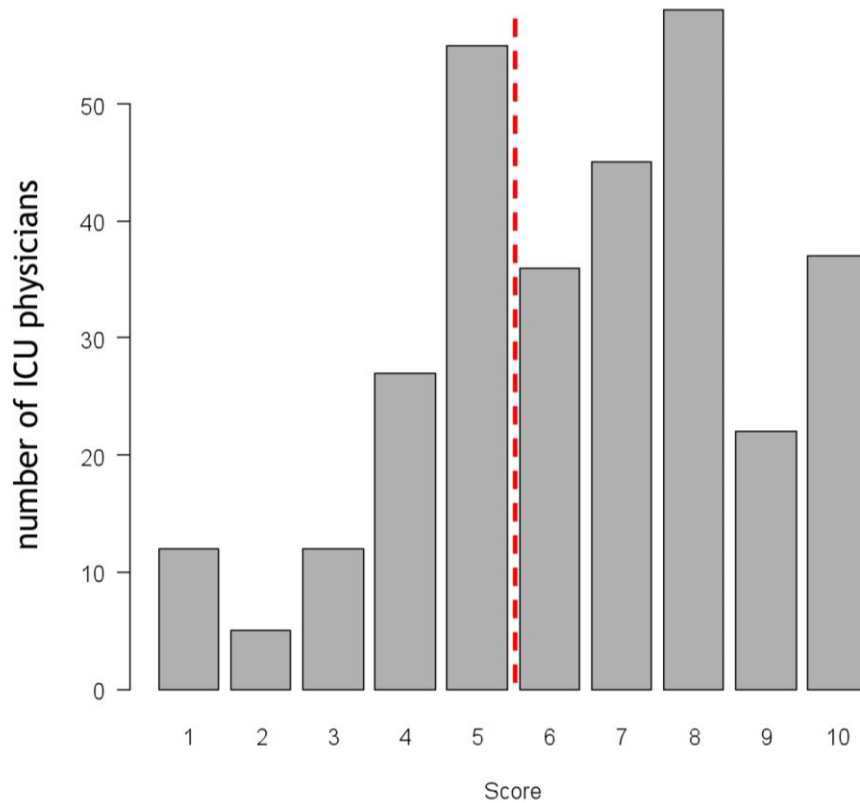
\* p<0.05 with ICU physicians

£ p<0.05 with nurses

\$ p<0.05 with patients

Data are expressed as median (interquartile range)

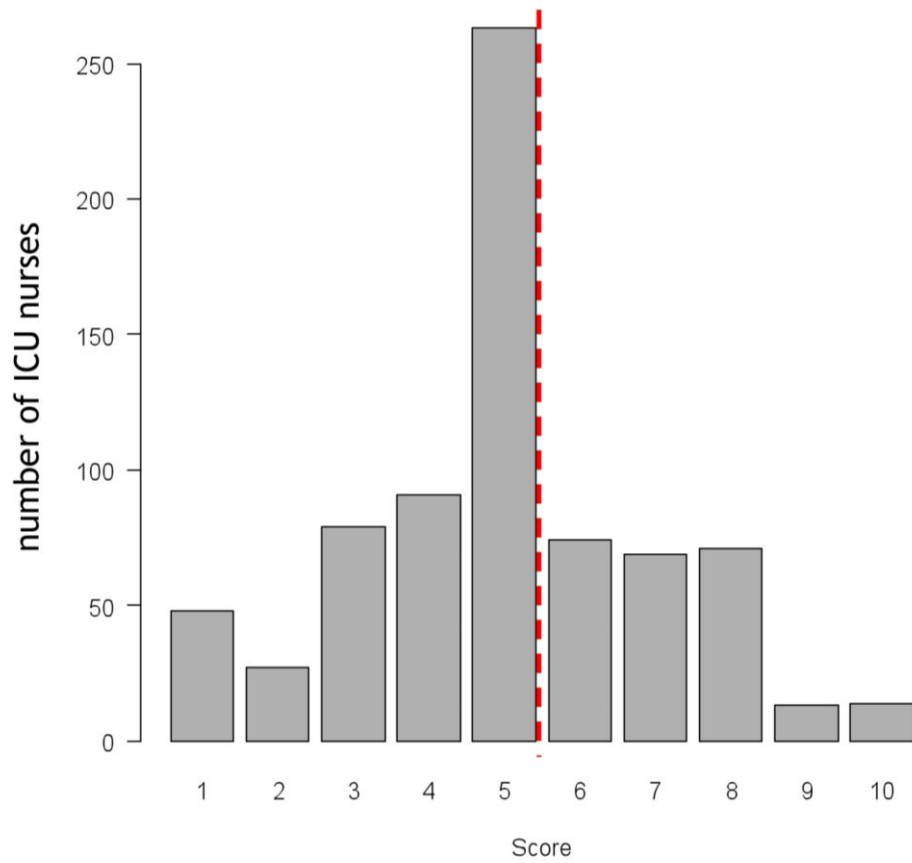
**Figure 1: Distribution of the ICU physicians' answers to the question "Are you willing to care for the patient depicted in the vignette?"**



*Are you willing to care for the patient depicted in the vignette?* ("1" corresponding to "not at all" and "10" corresponding to "certainly")

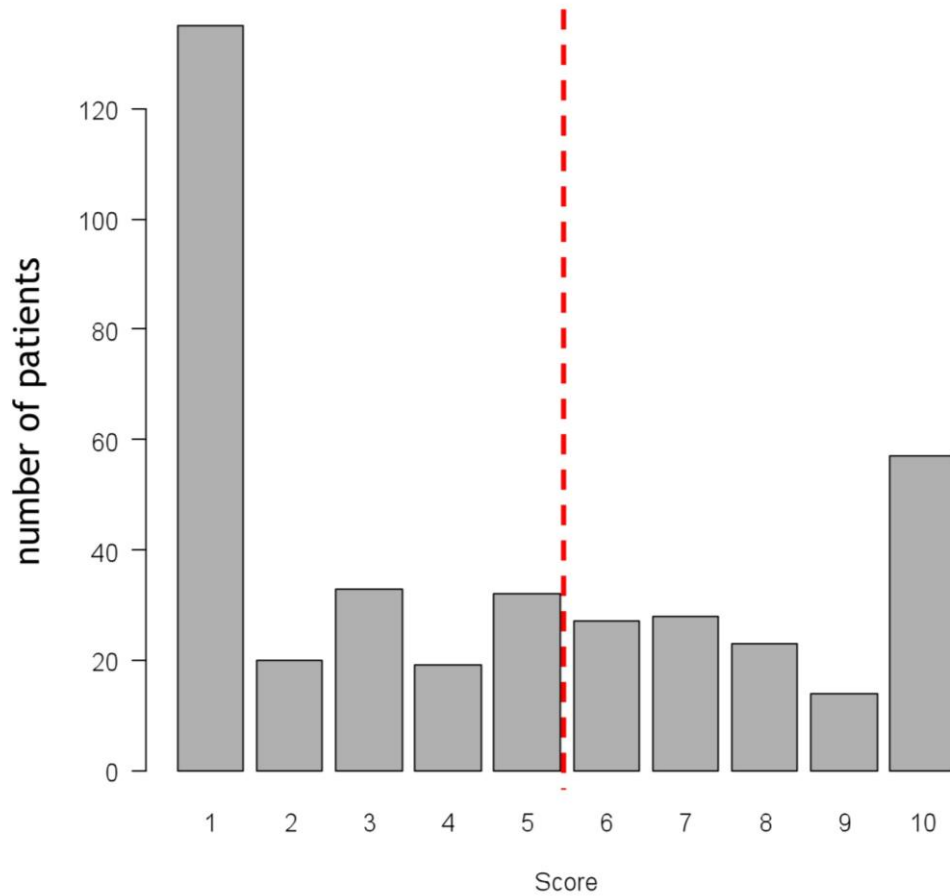


**Figure 2: Distribution of the ICU nurses' answers to the question "Are you willing to care for the patient depicted in the vignette?"**



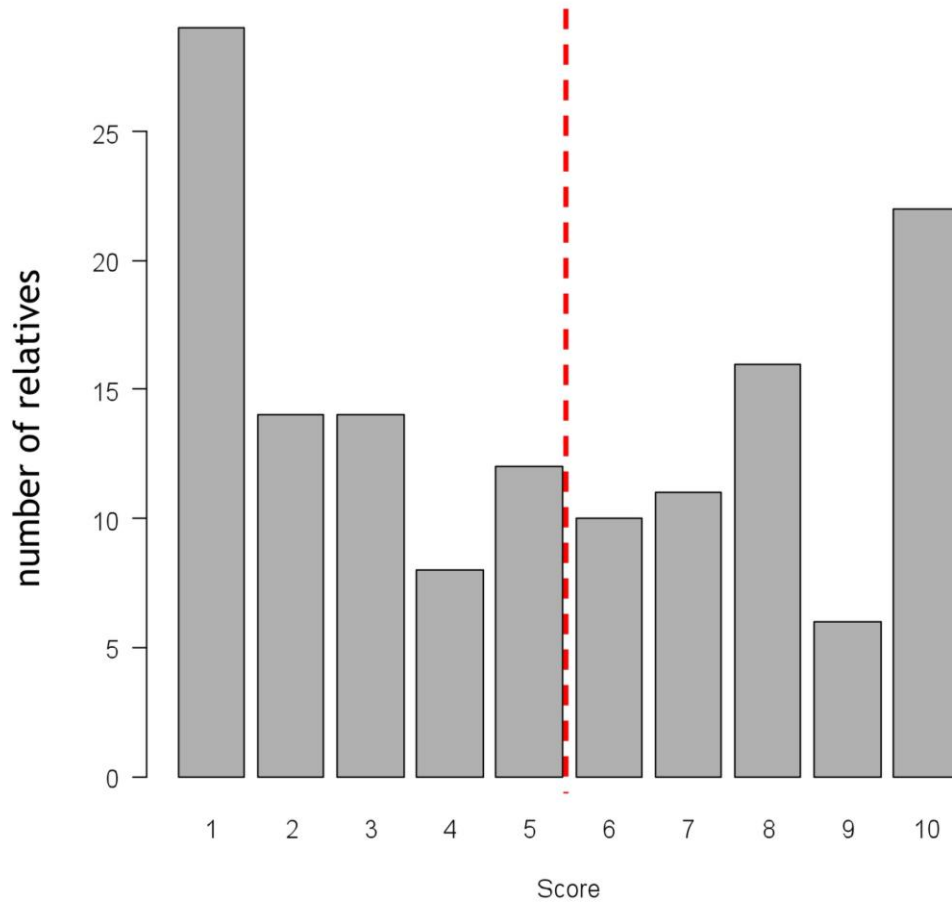
*Are you willing to care for the patient depicted in the vignette? ("1" corresponding to "not at all" and "10" corresponding to "certainly")*

**Figure 3: Distribution of the patients' answers to the question "Did you feel anxious during NIV?"**



**"Did you feel anxious during NIV?"**  
(**"1"** corresponding to **"never"** and **"10"** corresponding to **"always"**).

**Figure 4: Distribution of the patients' answers to the question "Did you feel that your relative was anxious during NIV?"**



***"Did you feel that your relative was anxious during NIV?"***  
(*"1" corresponding to "never" and "10" corresponding to "always"*).