

## SUPPLEMENTARY FILE 1: PAEDIATRIC PHYSICAL RESTRAINT-THEORY OF PLANNED BEHAVIOUR QUESTIONNAIRE

### Section I: Attitudes towards the use of physical restraints in critically ill paediatric patients.

Each question in this section refers to using physical restraints (mittens, wrist restraints, chest restraint...) in critically ill paediatric patients during their stay in the PICU.

The responses employ a seven-point rating scale, which has to be interpreted as follows.

**Example:** In my opinion, wearing a seat belt when travelling in a car is:

Unsafe	1 Extremely	2 Quite	3 Slightly	4 Indistinct (neither safe nor unsafe)	5 Slightly	6 Quite	7 Extremely	Safe
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If you think that wearing a seat belt when travelling in a car is quite safe, you must draw a circle around number 6.

**Please read the following statements carefully and draw a circle around the number that best describes your opinion about each question.**

1. In my opinion, the use of physical restraints in critically ill paediatric patients is...	Unsafe	1	2	3	4	5	6	7	Safe
2. In my opinion, the use of physical restraints in critically ill paediatric patients is...	Unnecessary	1	2	3	4	5	6	7	Necessary
3. In my opinion, the use of physical restraints in critically ill paediatric patients is...	Harmful	1	2	3	4	5	6	7	Beneficial
4. In my opinion, the use of physical restraints in critically ill paediatric patients is...	Unacceptable	1	2	3	4	5	6	7	Acceptable
5. If I use physical restraints in a critically ill paediatric patient, I will prevent self-extubation.	Strongly disagree	1	2	3	4	5	6	7	Strongly agree
6. If I use physical restraints in a critically ill paediatric patient, I will prevent self-removal of catheters/tubes.	Strongly disagree	1	2	3	4	5	6	7	Strongly agree
7. If I use physical restraints in a critically ill paediatric patient, I will prevent falls.	Strongly disagree	1	2	3	4	5	6	7	Strongly agree
8. If I cannot permanently monitor a critically ill paediatric patient, I will feel more relieved when they are wearing physical restraints.	Strongly disagree	1	2	3	4	5	6	7	Strongly agree
9. If I use physical restraints, I will have more time to perform my tasks.	Strongly disagree	1	2	3	4	5	6	7	Strongly agree
10. If I use physical restraints, the critically ill paediatric patient becomes more agitated.	Strongly disagree	1	2	3	4	5	6	7	Strongly agree
11. The use of physical restraints in a critically ill paediatric patient can cause skin injuries.	Strongly disagree	1	2	3	4	5	6	7	Strongly agree
12. The use of physical restraints in critically ill paediatric patients upsets me.	Strongly disagree	1	2	3	4	5	6	7	Strongly agree
13. In my opinion, preventing self-extubation in critically ill paediatric patients is...	Extremely undesirable	1	2	3	4	5	6	7	Extremely desirable
14. In my opinion, preventing self-removal of catheters and probes in critically ill paediatric patients is...	Extremely undesirable	1	2	3	4	5	6	7	Extremely desirable
15. In my opinion, preventing intubated critically ill paediatric patients from falling is...	Extremely undesirable	1	2	3	4	5	6	7	Extremely desirable
16. In my opinion, feeling relieved whenever I cannot monitor a critically ill paediatric patient is...	Extremely undesirable	1	2	3	4	5	6	7	Extremely desirable
17. In my opinion, having more time to perform my tasks is...	Extremely undesirable	1	2	3	4	5	6	7	Extremely desirable
18. In my opinion, if a critically ill paediatric patient becomes more agitated due to the use of physical restraints, it is...	Extremely undesirable	1	2	3	4	5	6	7	Extremely desirable
19. In my opinion, if physical restraints injure a critically ill paediatric patient's skin, it is...	Extremely undesirable	1	2	3	4	5	6	7	Extremely desirable
20. In my opinion, if using physical restraints in critically ill paediatric patients makes me feel uneasy, it is...	Extremely undesirable	1	2	3	4	5	6	7	Extremely desirable

## Section II: Subjective norms about the use of physical restraints in critically ill paediatric patients.

21. I use physical restraints in critically ill paediatric patients because professionals with whom I work think that they must be used.	Strongly disagree	1	2	3	4	5	6	7	Strongly agree
22. I feel under social pressure when I don't use mechanical restraints in critically ill paediatric patients.	Strongly disagree	1	2	3	4	5	6	7	Strongly agree
23. Other professionals in my place use mechanical restraints on paediatric critical patients.	Strongly disagree	1	2	3	4	5	6	7	Strongly agree
24. I am expected to use physical restraints in critically ill paediatric patients.	Strongly disagree	1	2	3	4	5	6	7	Strongly agree
25. My nursing colleagues disapprove of me using physical restraints in critically ill paediatric patients.	Strongly disagree	1	2	3	4	5	6	7	Strongly agree
26. My unit supervisor disapproves of me using physical restraints in critically ill paediatric patients.	Strongly disagree	1	2	3	4	5	6	7	Strongly agree
27. My doctor colleagues disapprove of me using physical restraints in critically ill paediatric patients.	Strongly disagree	1	2	3	4	5	6	7	Strongly agree
28. Patients' relatives disapprove of me using physical restraints in critically ill paediatric patients.	Strongly disagree	1	2	3	4	5	6	7	Strongly agree
29. My nursing colleagues' approval of my practice towards the use of physical restraints is important to me.	Not at all	1	2	3	4	5	6	7	Very much
30. My nursing supervisor's approval of my practice towards the use of physical restraints is important to me.	Not at all	1	2	3	4	5	6	7	Very much
31. My doctor colleagues' approval of my practice towards the use of physical restraints is important to me.	Not at all	1	2	3	4	5	6	7	Very much
32. Patients' relatives' approval of my practice towards the use of physical restraints is important to me.	Not at all	1	2	3	4	5	6	7	Very much

## Section III: Perceived behavioural control regarding the use of physical restraints in critically ill paediatric patients.

33. I am confident that I could use physical restraints in critically ill paediatric patients if I decide to.	Strongly disagree	1	2	3	4	5	6	7	Strongly agree
34. It is easy for me to make the decision to use physical restraints in critically ill paediatric patients.	Strongly disagree	1	2	3	4	5	6	7	Strongly agree
35. The decision to use physical restraints in critically ill paediatric patients is entirely up to me.	Strongly disagree	1	2	3	4	5	6	7	Strongly agree
36. When a critically ill paediatric patient cooperates, it reduces the use of physical restraints.	Strongly disagree	1	2	3	4	5	6	7	Strongly agree
37. Whenever a patient is undergoing a weaning or an awakening trial, it increases the use of physical restraints.	Strongly disagree	1	2	3	4	5	6	7	Strongly agree
38. Family presence at the bedside reduces the use of mechanical restraints in a critically ill paediatric patient.	Strongly disagree	1	2	3	4	5	6	7	Strongly agree
39. Pharmacological management of drug withdrawal syndrome reduces the use of mechanical restraints in a critically ill paediatric patient.	Strongly disagree	1	2	3	4	5	6	7	Strongly agree
40. Communication between the multidisciplinary team reduces the use of physical restraints in a critically ill paediatric patient.	Strongly disagree	1	2	3	4	5	6	7	Strongly agree
41. I am more likely to use physical restraints if the critically ill paediatric patient cooperates.	Strongly disagree	1	2	3	4	5	6	7	Strongly agree
42. I am more likely to use physical restraints if the critically ill paediatric patient is undergoing a weaning or an awakening trial.	Strongly disagree	1	2	3	4	5	6	7	Strongly agree
43. I am more likely to use physical restraints if a family member is accompanying the critically ill paediatric patient at the bedside.	Strongly disagree	1	2	3	4	5	6	7	Strongly agree
44. I am more likely to use physical restraints if I can administer a drug to manage the critically ill paediatric patient's drug withdrawal syndrome.	Strongly disagree	1	2	3	4	5	6	7	Strongly agree
45. I am more likely to use physical restraints if the patient's clinical status is discussed among the multidisciplinary team.	Strongly disagree	1	2	3	4	5	6	7	Strongly agree

**Section IV: Simulated clinical scenarios: Intention to use physical restraints.**

SCENARIO 1									
<p>A 6-year-old male child with Down syndrome and a medical history of atrioventricular canal defect is admitted to the PICU (private room) following surgery to close a ventricular septal defect using sutures and an atrial septal defect using a patch. Upon admission, the patient is equipped with an orotracheal tube connected to mechanical ventilation, a central venous catheter inserted through the right jugular, a left radial arterial catheter, a nasogastric tube, a urinary catheter, an external pacemaker lead, and thoracic drains (pleural and pericardial) connected to an aspiration system. Hemodynamically, the patient remains stable, albeit supplemented with low-dose inotropic support. Upon admission to the unit, the process of weaning is initiated with the progressive withdrawal of analgo-sedation. The patient gradually emerges from sedation, displaying responsive behaviours such as eye-opening and consistent movement of all four limbs and the head. The patient intermittently interacts with the orotracheal tube by tactile manipulation and, during one instance, exhibits intentional grasp of the pericardial drainage catheter. The parents are brought to the cubicle. Despite their apprehension, they understand the situation and try to help the patient relax.</p>	<p>Would you use physical restraints in this scenario?</p>								
	<table border="1"> <tr> <td>In no case</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> <td>7</td> <td>In all cases</td> </tr> </table>	In no case	1	2	3	4	5	6	7
In no case	1	2	3	4	5	6	7	In all cases	

SCENARIO 2									
<p>A 16-year-old female patient with no history of pathology is admitted to the PICU (private room) following ingestion of toxic substances and alcohol and a fall from 5 metres. Subsequent imaging reveals a severe head injury necessitating high-impact head trauma management, which includes orotracheal intubation, mechanical ventilation, and a combination of medical and surgical interventions spanning 10 days. Over the past week, concurrent with the withdrawal of analgo-sedation and the initiation of the weaning process, she has required pharmacological intervention with chlorpromazine, diazepam, and quetiapine to mitigate episodes of agitation and disorientation. Presently she remains connected to mechanical ventilation through an endotracheal tube, with parameters set at minimal levels. Additionally, she is equipped with a nasogastric tube and a urinary catheter. While central venous catheters and arterial catheters have not been inserted, two peripheral venous catheters have been placed in the upper extremities. The patient does not connect with her immediate environment and oscillates between periods of agitation alternating and moments of tranquillity.</p>	<p>Would you use physical restraints in this scenario?</p>								
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SCENARIO 3									
<p>A 12-year-old male patient with no history of pathology is admitted to the PICU due to a moderate bronchospasm attack. He is equipped with a peripheral venous catheter and a high concentration mask. Upon admission, he is agitated and displays moderate effort during breathing. In response, non-invasive mechanical ventilation is initiated, featuring an inspiratory pressure of 12cmH2O, an expiratory pressure of 6cmH2O and a FiO2 of 35%. However, due to the patient's agitation, the peripheral catheter becomes dislodged and the non-invasive ventilation face mask experiences substantial leakage. Consequently, a new intravenous device is introduced. The parents are distressed by the situation. The attending paediatrician opts to abstain from employing pharmacological interventions and instead endeavours to reassure the patient.</p>	<p>Would you use physical restraints in this scenario?</p>								
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SCENARIO 4									
<p>A 3-month-old female infant, born prematurely at 32 weeks of gestation with a history of moderate bronchopulmonary dysplasia, necessitating a tracheostomy for home respiratory management, is admitted to the PICU presenting symptoms of vomiting, diarrhoea, water-electrolyte imbalance and a Gorelick scale rating of 6, indicative of severe dehydration. Upon admission, she has a 3.5 tracheostomy cannula with an inflated balloon, remaining tethered to her home ventilator. She receives a 4-litre oxygen intake and 35% FiO2 and is also equipped with a urinary catheter, but it is not possible to perform blood tests or peripheral catheter placement. After several attempts and employing physical restraint, the procedure is performed successfully, and a catheter is placed in the right upper extremity. Intravenous rehydration using serum therapy is initiated. However, two hours after the start of this treatment, the patient becomes agitated. The help of the parents is requested in trying to calm the infant, but it is not very effective, and the peripheral catheter and the tracheostomy cannula become dislodged. The cannula is re-inserted without incident, and, after several attempts, a new peripheral catheter is successfully inserted using echocardiography. The patient continues to experience episodes of agitation, heightening the risk of falls. The parents react with distress. The attending paediatrician prescribes levopromazine drops to manage the patient's agitation.</p>	<p>Would you use physical restraints in this scenario?</p>								
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SCENARIO 5									
<p>A male neonate of 10 days is admitted from the emergency department, presenting bronchiolitis. He is equipped with high-flow nasal goggles delivering 8 litres of air per minute. Furthermore, a peripheral venous catheter placed in the child's right hand. He displays signs of moderate respiratory distress. Secretion aspiration is performed to acquire specimens for subsequent microbiological culture. Subsequently, the patient is subjected to non-invasive mechanical ventilation, characterised by an inspiratory pressure of 10cmH2O, an expiratory pressure of 5cmH2O and an FiO2 of 30%. Initially, the infant exhibits agitation in response to the intervention. However, when the care team stops handling him, he calms down and falls asleep with the assistance of the parents.</p>	<p>Would you use physical restraints in this scenario?</p>								
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SCENARIO 6									
<p>A 3-year-old female child, who has recently been extubated following 7 days of orotracheal intubation and invasive mechanical ventilation, is currently managed with a right jugular central venous catheter featuring two lumens. Additionally, she is equipped with a nasogastric tube and a bladder catheter. She is receiving continuous administration of fentanyl at 1mcg/kg/min, while diazepam drops have been discontinued. Within hours of extubation, the patient manifests episodes of agitation, which can be attributed to pharmacological withdrawal syndrome. A score of 8 on the Withdrawal Assessment Tool-1 (WAT-1) scale is recorded. The parents are distressed because they have two more children, the father has to work, and they lack childcare for the other children. For this reason, the patient spends time alone in her cubicle.</p>	<p>Would you use physical restraints in this scenario?</p>								
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