



Establish the Clinical Nutrition Nursing Guideline for Critical Patients with Ventilator

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Introduction (1)

- 33,000 patients/yr under mechanical ventilator supplement in Taiwan (Taiwan National Health Insurance, 2012).
- Long-term ventilator supplement spending about 5-20% of ICU cost, and NT 1.78 billion/yr Poor nutrition related to prolonging ventilator use, increasing complication rate, nosocomial infection and mortality (Jean-Claude et al., 2012 ;Neelemaat,Thijs, Seidell, Bosmans, & Schueren, 2010) .





Introduction (2)

- Improvement of patients' nutrition status helps the patients withdraw ventilator earlier and lower the discomfort (Tong et.al.,2012).
- No evidence-based nursing study between patients' nutrition and long-term ventilator use in Taiwan. The relationship between these patients' nutrition and ventilator use was investigated for improving the quality of hospital care and guiding the daily nursing care .





Purpose

To establish the guidelines of nutrition for critical patients who rely on ventilator by evidence-based nursing research.





Methods (1)

Evidence-based nursing research, 3 stages:

First stage

- Via evidence-based nursing research.
- keyword according to PICO model.
- Establishing the draft of clinical nursing guidelines through implemented a systematic review in 8 databases and 4 websites (literatures of clinical guidelines from 2001 to 2013).





Methods (2)

Second stage

- Expert focus group meeting in assessing the validity of guidelines, 10 experts with good nursing experience in respiratory care and 2 nutritionists.

Third stage

- Questionnaire on clinical staff to assess, survey was conducted
- Through a focus group composed of 10 and 210 clinical nurses.





Results (1)

systematic literature review, appraisal and extraction

- Six randomized controlled trials, one Quasi-experimental study and four clinical guidelines were found to meet the inclusion criteria. Drafted 45 clinical nutrition nursing guidelines on critical patients using ventilator.
- Four dimensions: assessment, intervention and evaluation of nutrition nursing, and management of complications nursing.



Table 1. Literature review of clinical nutrition nursing (RCT)

Author	project					
	Analysis of results	Recommended level	Assessment of nutritional care	Nutritional care measures	Nutritional care Appraisal	Complications Care
Casaer et al. (2011) ¹	Strongly recommended	A	2	3		
MacLeod et al. (2007) ²	Strongly recommended	A		1		
Montejo et al. (2010) ³	Strongly recommended	A				1
Rice et al. (2011) ⁴	Strongly recommended	A	3	1		

Table 2. Literature review of clinical nutrition nursing

Author	project					
	Analysis of results	Recommended level	Assessment of nutritional care	Nutritional care measures	Nutritional care Appraisal	Complications Care
Singer et al. (2011)⁵	Strongly recommended	A	3			1
Zhou et al. (2011)⁶	Strongly recommended	A	1	3		1
Zhou et al. (2011)⁷	Strongly recommended	A		3		1



Table 3. Literature review of clinical nutrition nursing (guidelines)

Publishers	Author	Guidelines cover project					
		Analysis of results	Recommended level	Assessment of nutritional care	Nutritional care measures	Nutritional care Appraisal	Complications Care
American Society for Parenteral and Enteral Nutrition (ASPEN)	McClave et al (2009) ⁸	Strongly recommended	A	4	11	3	1
The Dietitians Association of Australia (DAA)	Watterso n et al (2009) ⁹	Strongly recommended	A	3	8	5	3
The National Guideline Clearinghouse (NGS)	Malone et al (2012) ¹⁰	Strongly recommended	A	1	5	2	3
Agency for Healthcare Research and Quality (AHRQ)	Dellinger et al (2013) ¹¹	Strongly recommended	A		2	1	1



results (2)



The validity of the test draft of clinical guidelines

- "Clinical use of nutritional care of patients with severe ventilatorGuidelines" draft assessment summarized as nutritional assessment, intervention, appraisal, complications care four dimensions of 45.
- After the point group meetings, make recommendations on the draft questionnaire and consolidation.
- Experts recommend further divided into enteral nutrition, parenteral nutrition feeding and as a whole of 34.



Table 4. Demographics of specialists (n = 10)

	specialist (N=10)			
Variables	Number	Percentage	Mean	Standard deviation
Age(yr)			40.9	6.4
Working seniority(yr)			21.1	3.4
Gender				
Men	0	0		
Women	10	100		
Education level				
Master's degree	6	60		
University	4	40		
Titles				
Head Nurse	2	20		
Assistant Head Nurse	6	60		
Nutritionist	2	20		





Experts focus group meeting





results (3)

Investigating the feasibility of clinical guidelines

- Total of 10 experts completed questionnaires, a response rate of 100%. In addition, nurses completed questionnaires, a response rate of 95.2% .
- The questionnaire consists of 34 guidelines questions. Experts, completely agreed the applicability of the guidelines, and 98% of nurses agreed it.
- Overall, >98% of experts and nurses agreed the guidelines.





Table 5. Demographics of Nurses (n=200)

	Nurses (N=200)			
Variables	Number	Percentage	Mean	Standard deviation
Age(yr)			36.2	5.5
Working seniority(yr)			13.1	5.3
Gender				
Men	5	2.5		
Women	195	97.5		
Education level				
Master's degree	18	9.0		
University	161	80.5		
College	21	10.5		
Titles				
Registered Nurse	95	47.5		
Nurse	105	52.5		

Table 6. Results of questionnaire survey

	Strongly agree (%)	Very agree (%)	agree (%)	Disagree (%)	Strongly Disagree (%)
specialist n=10	55	43	2	0	0
Nurses n=200	39	42.2	17.6	0	0





Discussion (1)

- Optimized clinical guidelines through the best evidence of systematic review and meta-analysis recently.
- The established guidelines is suitable to ventilator-carried critical patients in Taiwan .





Discussion (2)



Applicability and clinical significance, and finally the establishment of the clinical guidelines of 34 Items and recommendations empirical level of Level 2 and 33Grade A and 1Grade B.





Discussion (3)

- The first dimension of guidelines was the assessment of nutrition nursing. That was extracted from three guidelines, three randomized controlled trials and one quasi-experimental study (Malone et al. , 2012 ; McClave et al., 2009 ; Rice et al., 2011 ; Watterson et al., 2009) .
- The second dimension was the intervention of nutrition nursing which consisted enteral nutrition, feeding methods and peripheral nutrition. That was extracted from four guidelines, five randomized controlled trials and one quasi-experimental study (Zhou et al., 2003 ; Lirui et al., 2008 ; Casaer et al., 2011 ; Malone et al., 2012 ; McClave et al., 2009 ; Rice et al., 2011 ; Watterson et al., 2009) .





Discussion (4)

- The third dimension of guidelines was the evaluation of nutrition nursing. That was extracted from three guidelines, one randomized controlled trial and one quasi-experimental study (Zhou et al., 2003 Dellinger et al., 2013 ; Rice et al., 2011 ; McClave et al., 2009 ; Watterson et al., 2009) .
- The fourth dimension of guidelines was the complications nursing which extracted from two guidelines, two randomized controlled trials and one quasi-experimental study (Zhou et al., 2003 ; Lirui et al., 2008 ; McClave et al., 2009 ; Watterson et al., 2009)





Conclusion (1)



- Drafted 34 clinical nutrition nursing guidelines on critical patients using ventilator.
- Four dimensions: assessment, intervention and evaluation of nutrition nursing, and management of complications nursing.
- The guideline was suggested to implement into clinical care.





Conclusion (2)



- The expectation is to extend the recommendations to other ICUs.
- Provide the guideline for nursing coarse in critical patient who had relied on ventilator supplement.
- Appropriate nutrition supplement in critical patient who was under ventilator and assist the patient to withdraw ventilator as soon as possible.





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Thanks for your attention

