



The effectiveness of a self-learning manual of continuous renal replacement therapy on critical care nurses

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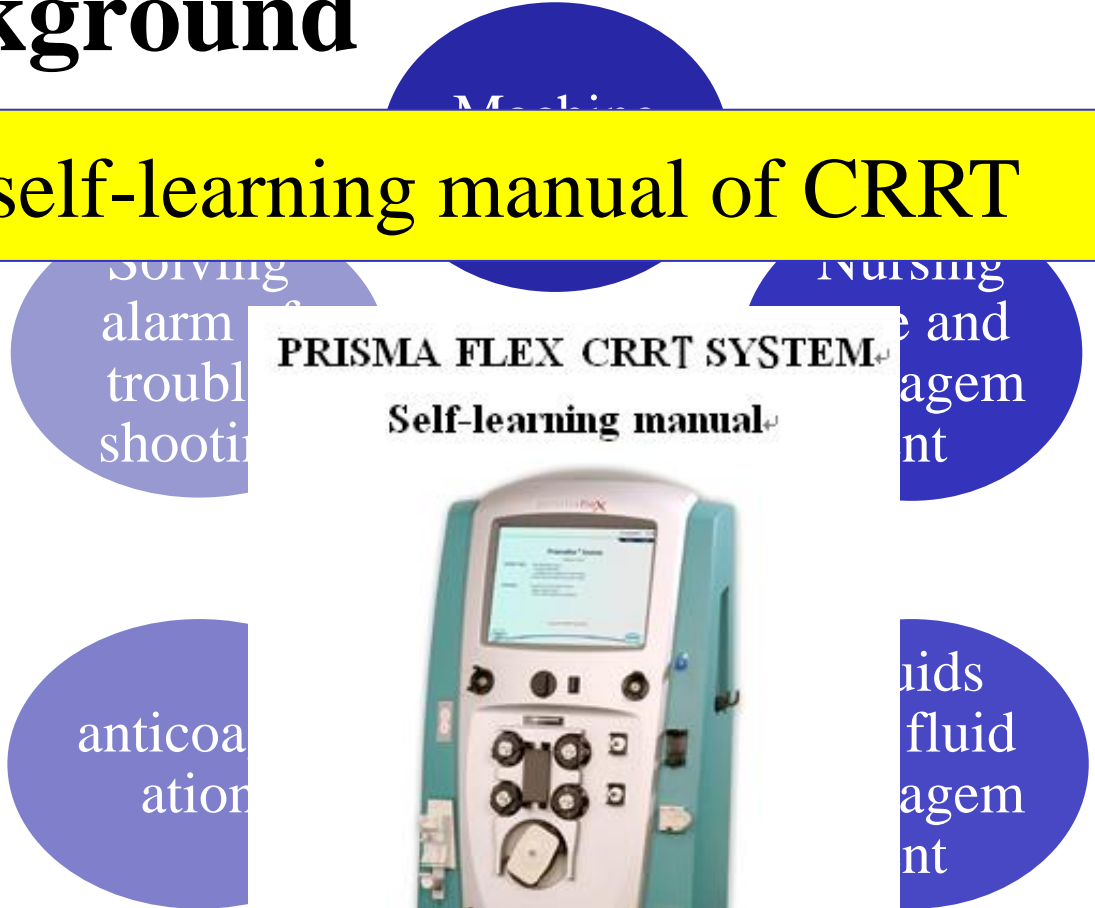
Background

- ⌚ CRRT (continuous renal replacement therapy)
 - ⌚ slow continuous fluid removal, steady acid-base and electrolyte correction, and beneficial effects on hemodynamic stability.
 - ⌚ To dialyze patients in a more physiologic way, slowly, over 24 hours, just like the kidney.
 - ⌚ Indication:
ARF, pulmonary edema, hyperkalemia, metabolic acidosis, combine hemodynamic instability.



Background

A self-learning manual of CRRT





Objective

- 1. Test the effectiveness of a self-learning manual of continuous renal replacement therapy on critical care nurses.



Methods

Controlled group

O1+O2 X1 O3
(post 2wks)

Experimental group

O1+O2 X2 O3
(post 2wks)

X1: Traditional continue education program

X2: Traditional continue education program + self-learning manual of CRRT

O1 : RNs' Demographic information

O2 : Pre test of knowledge & technique

O3 : Post test of knowledge & technique



Results: Demographic characteristics

		Experimental N=39		Control N=37		Statistics	
		N(%)	Mean(SD)	N(%)	Mean(SD)	<i>t</i>	<i>p</i>
Attended CRRT nursing care courses prior 1 year	<2	21(53.8)	1.6(1.2)	17(45.9)	1.9(1.6)	.728	.437
	2-4	17(43.6)		16(43.3)			
	>5	1(2.6)		4(10.8)			
Attended Prismaflex courses prior 1 year	0	14(35.9)	0.9(0.9)	12(32.4)	1.0(0.9)	.629	.531
	1-2	24(61.5)		22(59.5)			
	3-4	1(2.6)		3(8.1)			



Pre & post-test of CRRT knowledge

	Experimental N=39		Control N=37		Statistics	
	Mean	SD	Mean	SD	t	p
Knowledge scores at pretest	8.03	1.755	7.97	1.907	.125	.901
Knowledge scores at posttest	12.92	1.753	8.35	1.932	10.812***	<.001



Pre & post-test CRRT technique

	Experimental N=39		Control N=37		t	p
	Mean	SD	Mean	SD		
Technique scores at pretest	24.31	3.961	24.30	4.371	-.011	.991
Technique scores at posttest	29.26	1.251	26.00	4.262	-4.468***	<.001



Pre & post-test CRRT technique

	Experimental N=39		Control N=37		t	p
	Mean	SD	Mean	SD		
Prepare for circuit set-up	7.72	.560	6.68	1.292	4.521***	<.001
Machine operating	9.38	.633	8.22	1.377	4.710***	<.001
Fluids and fluid management	3.90	.502	3.57	.867	2.015*	.049
Nursing care and management	5.44	.821	5.14	1.417	1.124	.266
Solving alarm of troubleshooting	2.74	.498	2.41	.725	2.358*	.021



Experimental group pre & post-test of CRRT knowledge & technique

	Pre-test		Post-test		t	p
	Mean	SD	Mean	SD		
Scores of knowledge	8.03	1.755	12.92	1.753	12.553**	<.001
Scores of technique	24.31	3.961	29.26	1.251	-8.845***	<.001



Limits

- a The duration of the self learning program was only 2 weeks, and a longer educational period might have enabled greater improvements in compliance with the quality indicators.
- a In the future, the strategy of self-learning manual could be applied to continuous education for intensive care unit nursing staffs extensively to increase the learning effectiveness as well as to improve the quality of nursing care.



Bottom line

- Traditional CRRT continue education program and experience can improve the knowledge and skill on CRRT.
- An easy-to-carry self-learning manual of CRRT is more effectiveness than traditional education program, particularly prepare for circuit set-up, machine operation, fluid management and solving alarm of troubleshooting.
- This study results provide a strong evidence on critical care nurses.