

**EFFECT OF CLINICAL PRACTICE
GUIDELINES DEVELOPED BASE ON
EVIDENCE BASE PRACTICE
FOR POSTOPERATIVE PAIN
MANAGEMENT
IN PATIENTS WHO UNDERWENT
ORTHOPEDIC SURGERY**

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Backgrou



- Postoperative pain is still a critical problem, especially in an orthopedic surgery, the severe pain still remains on the 3rd day after surgery.
- It's a largely result of the nature of surgical procedures, which often involves muscle and skeletal tissue repair or reconstruction. (Pasero & McCaffery, 2007)
- Suffering and discomfort with unrelieved postoperative pain caused to many problems among patients underwent orthopedic surgery.
- 88 % of patients reported having the highest pain score on the 1st day after surgery and the score was

Backgrou

nd :

- The adverse effects of inadequate pain management/ unrelieved pain are deleterious and can lead to many complications after the surgery.

(Nimmanrach, 2004,

Theantong, S., 2005)

- The unrelieved pain increases the stress response in a way that affects the immune system, leading to a delays of healing process, and be at risk for a chronic pain syndrome



Backgrou

nd :

- On the other hand, adequate postoperative pain is associated with lower cardiopulmonary complications, lower morbidity and reduced cost of care. (McNille, Sherwood, Starck & Thomson, 1998. Kent, 2003)
- Effective pain management has been shown to promote earlier ambulation and reduce postoperative complications. (AHCPR, 1992; Pasero & McCaffery, 2007).



Backgrou

nd :

- Unfortunately, a health care provider team had not the same guideline for postoperative pain management that caused a severe pain still remain. (Hansson et al., 2006)
- Results from previous studies demonstrated that development of CPG for postoperative pain management based on EBP with collaboration from multidiscipline team can help providers effectively manage postoperative pain among orthopedic patients, and also increasing satisfaction



Background



At Ao-U-Dom, a hospital 50 % of post-orthopedic surgery suffered from severe pain and improper pain management.

There were a variety of pain management used to alleviate postoperative pain among orthopedic patients; however, patients still suffered from improper pain relief.

• Therefore, the CPG of postoperative pain management in patient who underwent orthopedic surgery was developed using EBPs and multidisciplinary collaboration; with the objective of effective pain management among this group of patients.

(Ao-U-Dom hospital data, 2007-2009)

Backgrou

nd:

- Even though alleviation postoperative pain is given by medicine, but nursing role is also important for multi-modal pain management with non-medicine.
- It remains an issue in nursing practice to improve postoperative pain for patient who underwent orthopedic surgery.
- The CPG was developed base on evidence base practice by the health care provider teams for post operative pain management in orthopedic surgery and the Diffusion of Innovation framework has been used to



Objecte

d :

1. To examine effect of CPG on post orthopedic surgery pain and patients' satisfaction on post operative pain management.
2. To ascertain nurses' satisfaction on the implementation of the CPG.



Sample



S :

Inclusion criteria	Exclusion criteria
<ul style="list-style-type: none">- Age \geq 15 yrs- Good conscious- Post operation of lower extremities-chronic conditions under control- No injuries of other organs	<ul style="list-style-type: none">- Patient with postoperative complication- Patients expected to be re-operated

Sample



recruitment :

- **Sample size was 42 post orthopedic surgery patients inducted from surgical units of Ao-U-Dom hospital and Banlamoong hospital in Chonburi, Thailand.**
- **Assigned the samples into the intervention group from surgical units of Ao-U-Dom hospital (21 participants received the CPG)**
- **and control group from surgical unit of Ao-U-Dom hospital and Banglamoong hospital (21 participants received usual treatment)**

Instruments:

intervention tools



- Post operative pain management CPG with content validity of 0.9
- Handbook of CPG with content validity of 1
- Pain management booklets with content validity

Instruments:

research tools

- Numeric pain red colour scale. (alpha = .80)
- Patient satisfaction scale (alpha = .90)
- Nurse satisfaction scale (alpha = .90)
- Implementing CPG scale (alpha = .90)

Methods :



Designs : The two-group posttest-only design was used to study postoperative pain management in patients who underwent orthopedic surgery of hospitals in Thailand .

Methods :

1. The first part :

Developed the CPG
Scope the problem

develop the CPG with health care provider team for postoperative pain management in patient who underwent orthopedic surgery based on

principle guidelines of RCAI, The That perioperative nurses association and ERPs
Test content validity index and reliability
Approve the CPG and present to hospitalized

executive
Present to ethic committee

Try out the CPG with 5 orthopedic patients who underwent to surgery

and approve the CPG for appropriate of user by



Methods

2. The second part :

Implement the CPG

Informed implementing the CPG to all nurses of Ao-U-Dom

hospital after complete conducted the control group of

Ao-U-Dom hospital & Banglamoong

hospital by selected 21

Conducted the intervention group

participants received usual treatment

Ao-U-Dom hospital 21

participants received the CPG

Examine : patients' post operative pain, satisfaction

and nurse's satisfaction on

Analyzed and summarized the data

◆ stage of

prep

◆ stage of

Impleme

nt

the CPG

protecting right all of the samples

Methods :



3. The CPG consisted of four stages including :

- **perioperative** : assessment and prepare the patients for operational practice and post operative pain management by nurse anesthetist.

- **preoperative (in operation room)** : Psycho-support, appropriate position and premedication

Methods :



- **postoperative at a recovery room :** Nurse anesthetist use medicine guideline (Wanna Srirojanakul, 2010) for post operative pain management and using non-medicine with relaxation technique for supplement.
- **postoperative care at surgical units :** Nurses' ward used postoperative pain guidelines for pain management that was

Methods :



4. Intra experiment, researcher coached and coraborated nurses by conference suggested and encouraged to adapt the CPG for simply to use.
5. Data were gathering by using the Numeric Pain and Red Color Scale, the patient's satisfaction questionnaire, and the nurses' satisfaction questionnaire.
6. Data analysis :

Results :

The results were as follows:

1. The general demographic data, sex, age and fracture site of two sample's group (control group and intervention group) were similar by tested with chi-square and t - test.

(as shown on the table below)



Samples' Data	Control gr. (n=21)		Intervention gr. (n=21)		χ^2	p- val ue
	number	%	number	%		
Sex .00						.63
Male	\bar{x} 15	71.4	\bar{x} 10	71.4		
Female	6	28.6	6	28.6		
Age (years) 37.95, SD =18.71)	(= 37.45, SD =20.27)		(=			.34 ^a
15 – 24	8	38.1	7	33.3		
25 – 34	2	9.5	3	14.3		
35 – 44	5	23.8	2	9.5		
45 – 54	2	9.5	4	19.1		
55 - 64	1	4.8	2	9.5		
> 65	3	14.3	3	14.3		
Fracture site .00						.62

Results :



2 . Pain scores were significantly reduced in the intervention group compared with control group over five days after surgery ($p < .05$). (as shown on the figure 1 and 2)

Figure 1 graph postoperative pain score mean 5 days of control group

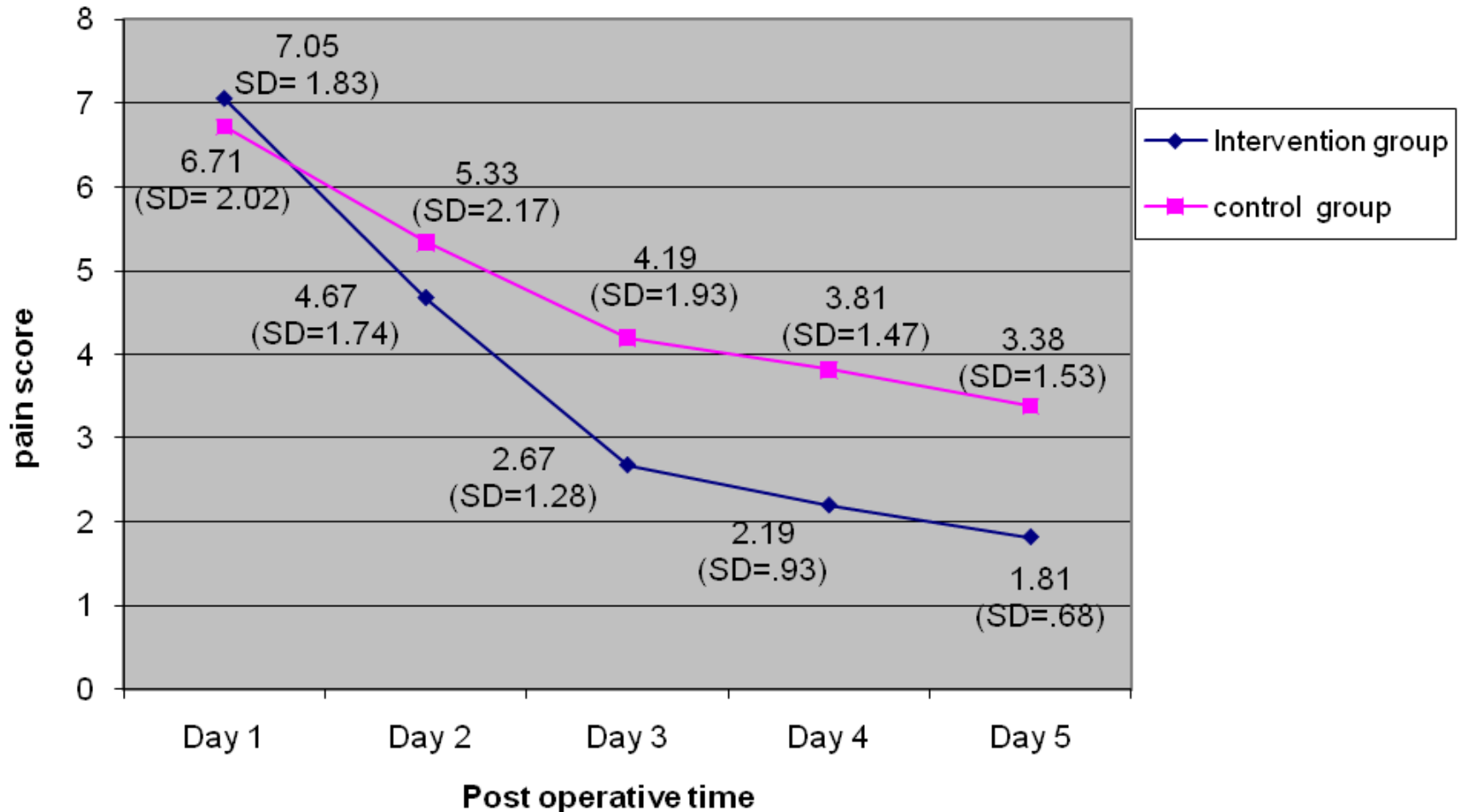
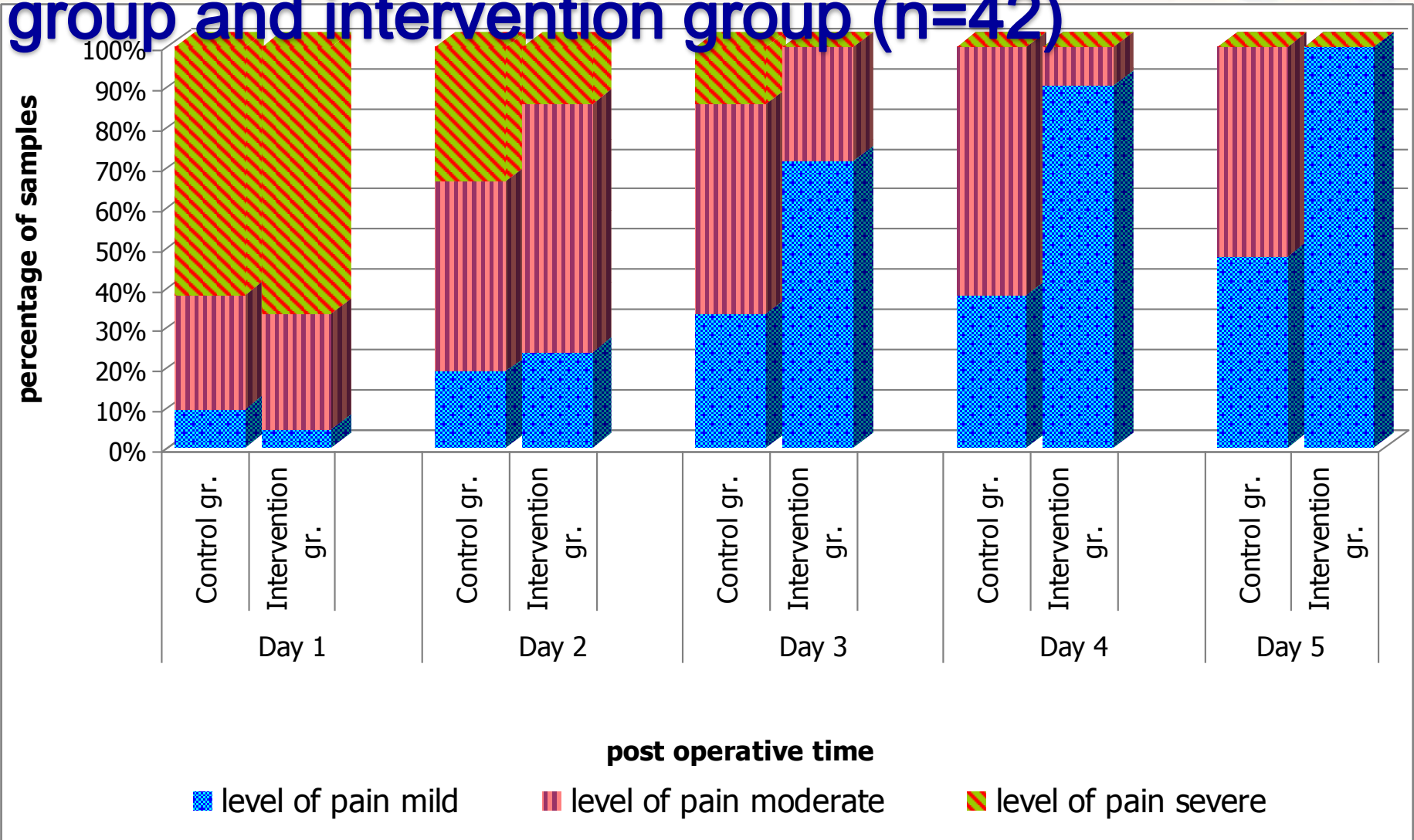


Figure 2 graph compare level of postoperative pain score 5 days of control group and intervention group (n=42)



Result

3. Analyzed postoperative pain scores' mean by Repeated

Measure one-way ANOVA :

The intervention group and postoperative time had interacted that significantly difference of postoperative pain score mean. (as show on the table 1)



Table 1 : Compare postoperative pain scores' mean and intervention group by Repeated measures ANOVA in the difference time. (n = 42)

Source	SS	df	MS	F	p
Intercept					
Group	53.51	1	53.51	5.44	.025
Error	393.62	40	9.84		
Within group					
Time	522.31	2	240.17	154.16	< .001
Group X Time	30.16	2	13.87	8.90	< .001
Error (time)	135.52	87	1.56		

***P < .05**

Results :



4. The experimental group had more significantly satisfaction on pain management than those in the control group ($p < .05$). (shown on the table 2.)

Regulation of classification mean of satisfaction score (Prakong, 1999)

- Score 2.51 - 3.00 = most satisfaction
- Score 2.01 - 2.50 = many satisfaction
- Score 1.51 - 2.00 = least satisfaction
- Score 1.00 - 1.50 = don't satisfaction

Table 2 Compare mean difference two group of patients' satisfaction about postoperative management after 5 days (n = 42)

Satisfaction	Control group		Intervention group		Mean Difference	t	p (one-tailed)
	\bar{X}	SD	\bar{X}	SD			
Part 1 : Pre operative information	2.08	2.02	2.58	1.89	-3.000	-4.979	<.001
Part 2 : Relationship of nurse and patient	2.29	0.96	2.79	0.68	-1.000	-3.997	<.001
Part 3 : Basic nursing care	2.27	1.66	2.59	0.99	-0.952	-2.253	.016*
Part 4 : Nursing care during postoperative pain	2.14	2.06	2.63	1.75	-1.952	-3.307	.001*
Total	2.16	0.61	2.62	0.51	-6.905	-4.484	<.001

* < .05

Results :



5. 96.09% of health care providers satisfied with the CPG at a highest level and decided to continue practice following the CPG **88.86%**.

Conclusion & Implication for

Practice.:

- Results of the study are evidence-based practice in postoperative pain management for patients with orthopedic surgery.
- Application the evidence-based CPG and the Diffusion of Innovation Model can reduce postoperative pain, enhance patients' satisfaction, increase nurses' satisfaction, and promote nursing quality of care on postoperative pain management.



Conclusion & Implication for

The reduction of post operative pain after be cared with the CPG would be reasonable to use health care provider and patient time to promote relaxation.

It could give these orthopedic patients additional amount of pain relief, and it may be that health care providers and patients feel this small benefit to be worthwhile.



**Thank you
for your attention**

