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From evidence to practice and policy making: Promoting the health care quality of children with asthma in Taiwan

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Health care team collaboration

School



Parent



Nurses



Physicians





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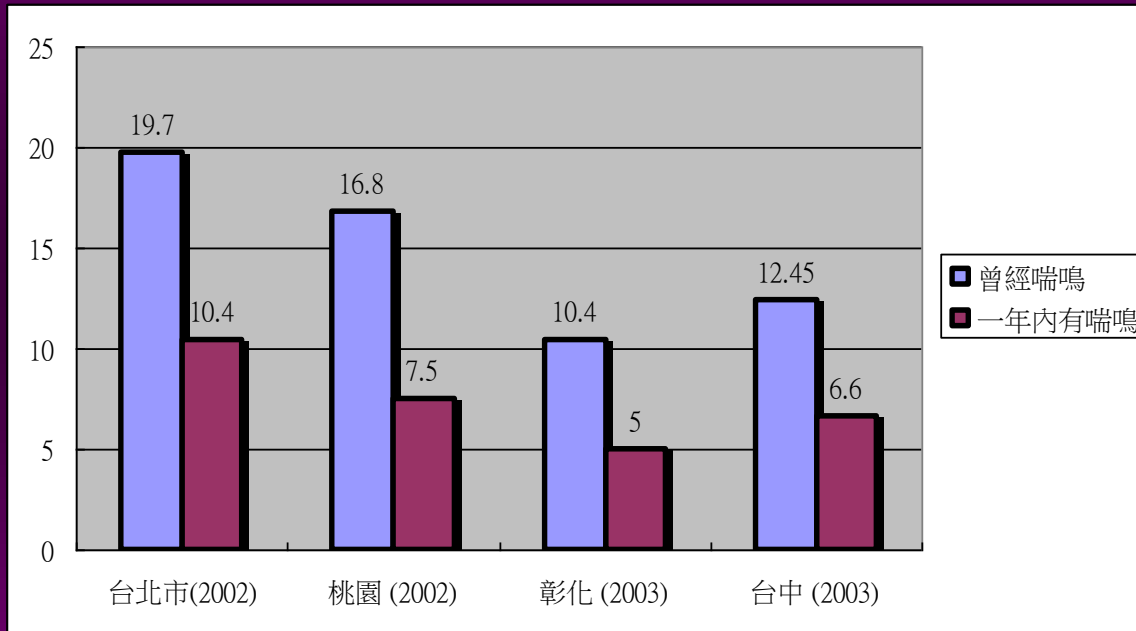




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The epidemiology of childhood asthma in Taiwan



Yan DC, Ou LS, Tsai TL, et al. Prevalence and severity of symptoms of asthma, rhinitis, and eczema in 13- to 14-year-old children in Taipei, Taiwan. *Ann Allergy Asthma Immunology* 2005;95:579-85.

Lai, MF, Huang, JL, **Chiang, LC**, Wang, FY and Chen, CY (2006). Prevalence of asthma and allergies from ISAAC survey of schoolchildren in central Taiwan. *Journal of Asthma*,

Chiang, L. C., Chen, Y. H., Hsueh, K. C., & Huang, J. L. (2007). Prevalence and severity of symptoms of asthma, allergic rhinitis, and eczema in 10- to 15-year-old schoolchildren in central Taiwan. *Asian Pacific Journal of Allergy and Immunology*, 25, 1-5.



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Epidemiology and Current Status of Asthma and Associated Allergic Diseases in Taiwan

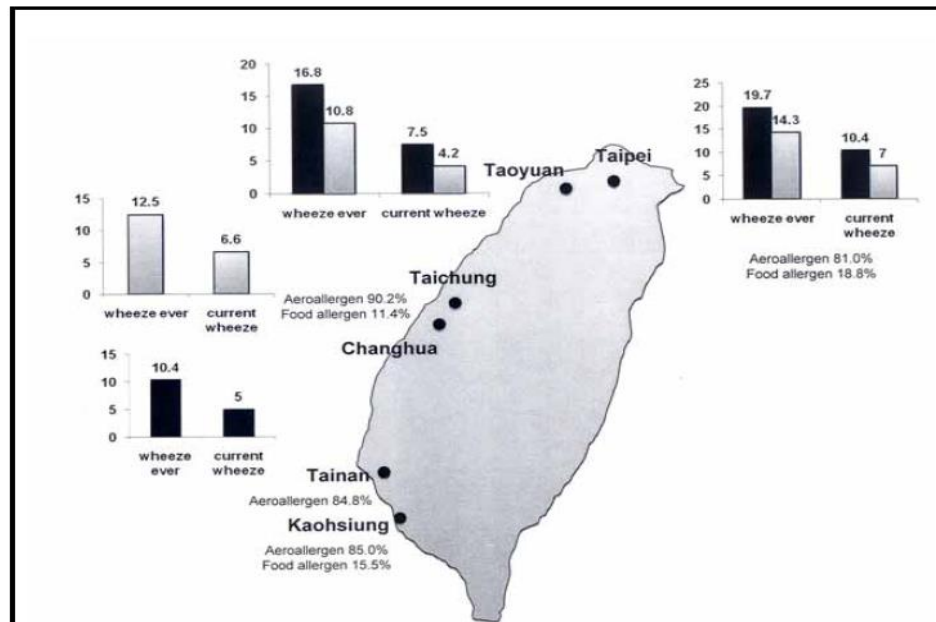


Fig. 1 The prevalence of asthma in children and the sensitization rate of aeroallergens and food allergens in different locations in Taiwan.^{4-9,12,16} The black bar represented age group of 6-7 years old; the grey bar represented age group of 13-14 years.

Kuo-Wei Yeh, **Li-Chi Chiang** and Jing-Long Huang (2008).

Epidemiology and Current Status of Asthma and Associated Allergic Diseases in Taiwan- ARIA Asia-Pacific Workshop Report. *Asian Pacific Journal of Allergy and Immunology*, 26(4), 257-64.



Children with asthma

- The most common chronic disease of children in Taiwan
- Complexity treatments need self-management
 - Medication—long-term inhaler use
 - Environmental control
 - Attack management
 - Peak flow meter monitor
- Recurrent sign/symptoms---impact children quality of life
- Patient education as the nurses' responsibility

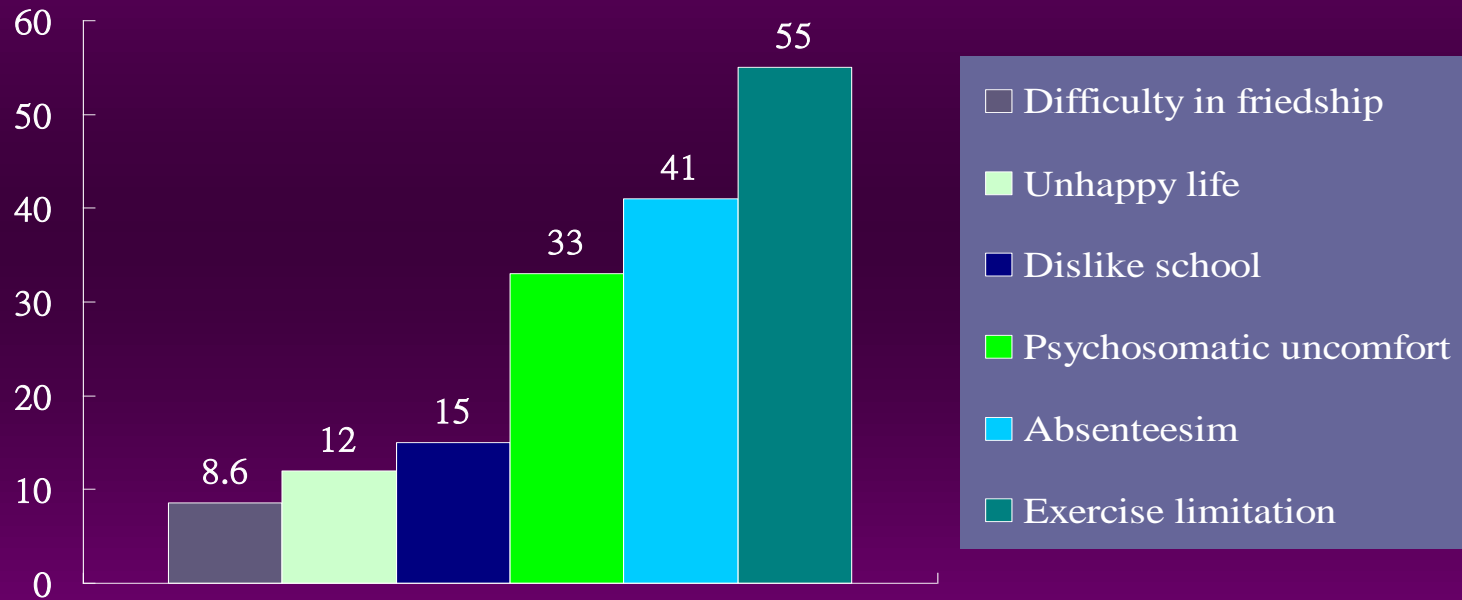


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The life impact of children with asthma



Chiang, L. C., Huang, J. L., Lu, C. M. (1999). A Study of Predisposing Factors and Self-Management Behaviors of School-Age Children with Asthma and the Impact of Summer Asthma Camp. *The Journal of Nursing Research*, 7(4), 307-320.

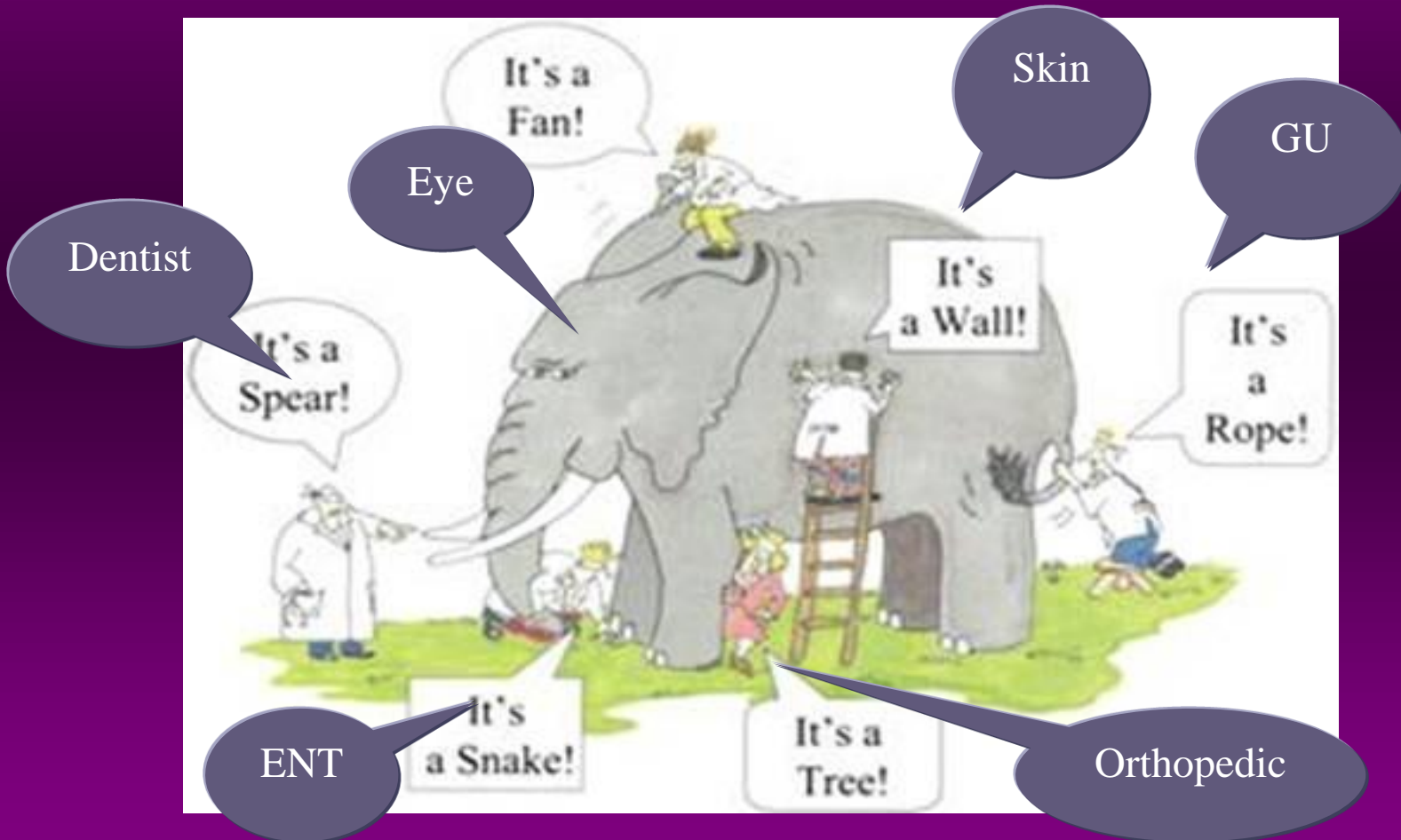


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What's wrong of the elephant??

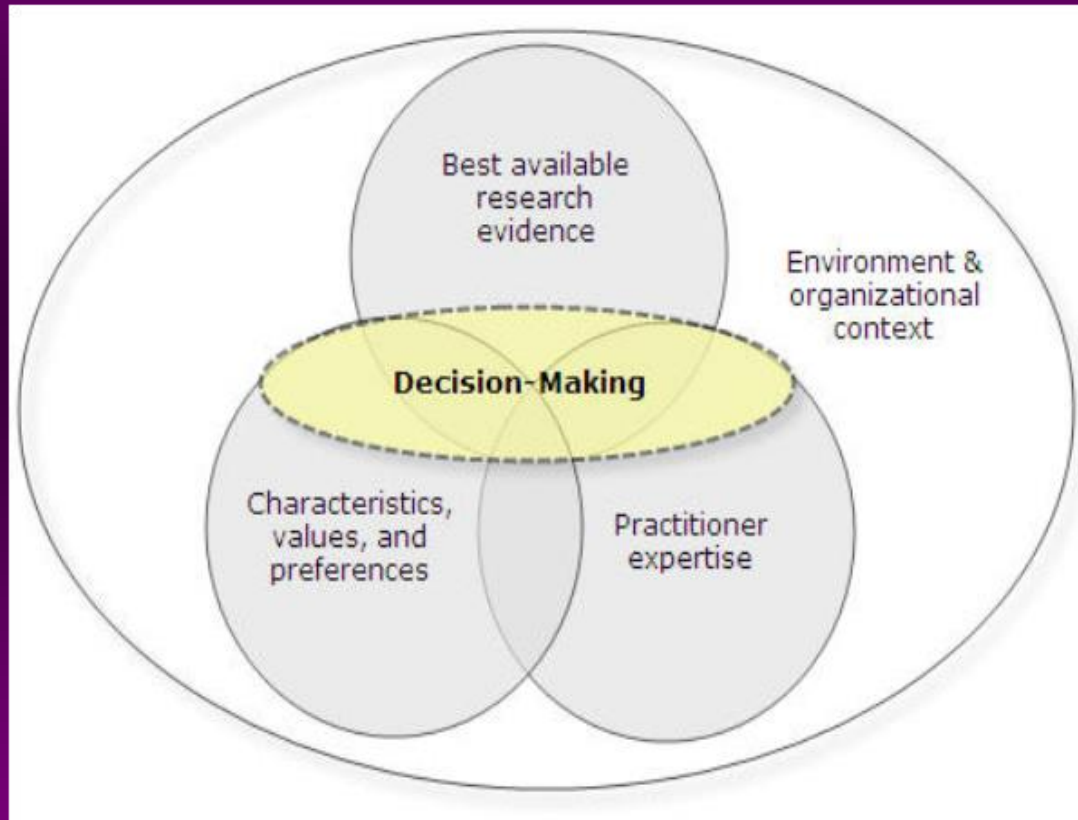




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Trans-disciplinary Model of Evidence-Based Practice



Satterfield, J., Spring, B., Brownson, R.C., Mullen, E., Newhouse, R., Walker, B. Whitlock, E. (2009). Toward a Transdisciplinary Model of Evidence-Based Practice, *Milbank Quarterly*, 87(2), 368-390. Model available at <http://www.ebbp.org>



Patient-centered care

- Because each **physician, nurse, physical therapist, pharmacist, dietitian** cares for one patient at a time.
- Population health care is the **province of public health**. It is not and should not be the province of individual practitioners.
- That would violate our oaths to **do no harm**, by placing the good of the many above the good of the one who is being cared for.
- **We exist to serve the patient.**

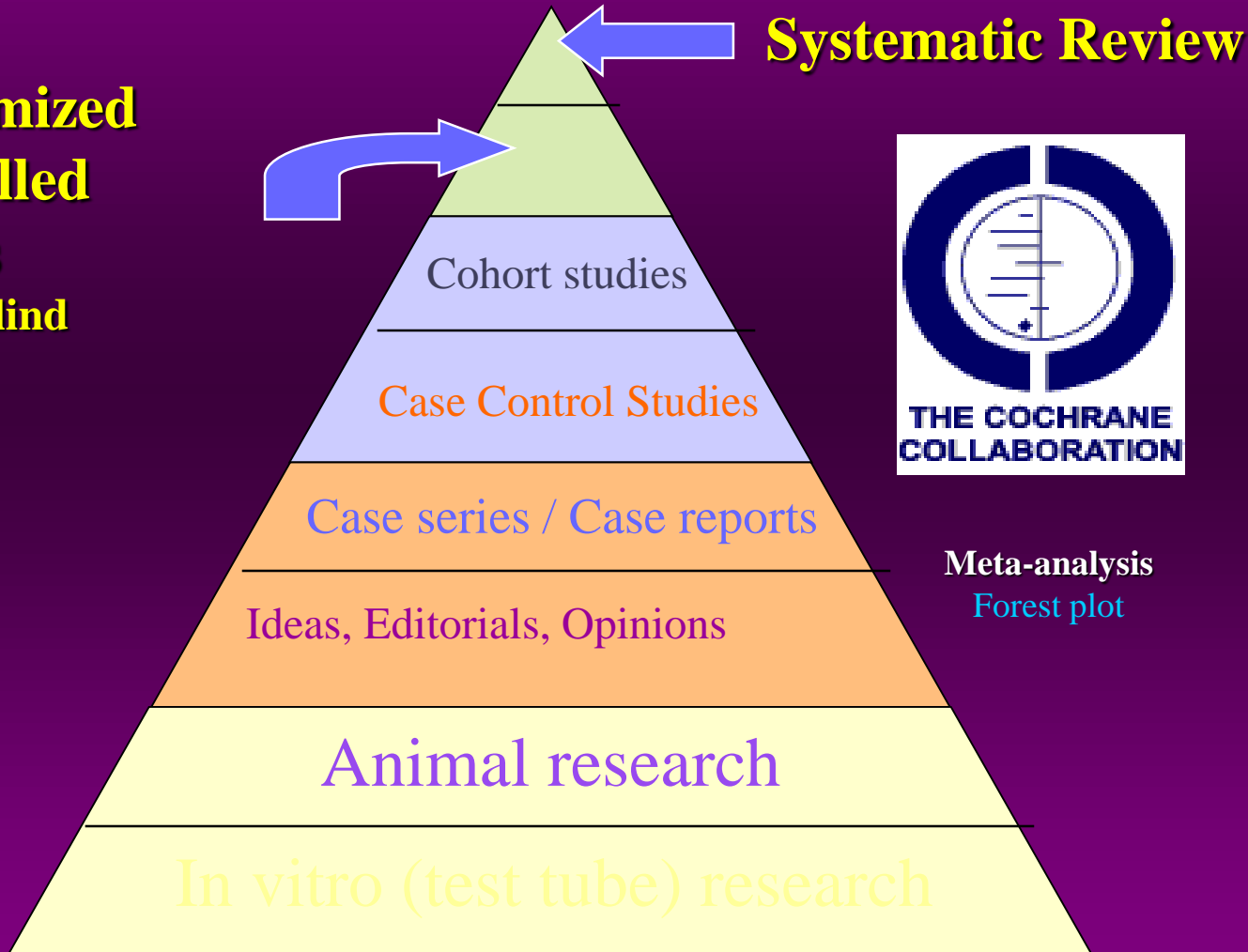


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The Evidence Pyramid

**Randomized
Controlled
Studies
Double Blind**



Meta - analysis

研究設計與證據的強度 (Bias)

綜合分析



The best evidence depends on the type of question

- What are the phenomena/problems?
- What is frequency of the problem?
- Does this person have the problem?
- Who will get the problem?
- How can we alleviate the problem?
- **Meaning:**
 - qualitative and Observation
- **Frequency and Etiology:**
 - case-control study and survey with Random (or consecutive) sample
- **Diagnosis:**
 - Random (or consecutive) sample with gold stand
- **Prognosis:**
 - Follow-up of inception cohort
- **Therapy**
 - Randomized controlled trial (RCT)

Best evidence is not always from RCTs



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The Question about the “**Meaning**”

1. What are the self-management behaviors of parents of children with asthma?
2. What’s the experiences of life quality among children with asthma?



Behavioral assessment

- **Research question:** What are the self-management behaviors of parents with asthmatic children??
- **Purpose:** explore the phenomena of self-management of successful parent with children
- **Methods:** to explore the self-management behaviors of the successful managing parent with asthma children by in-depth interviewing method

Chiang, L. C., Huang, J. L., & Chao, S. Y. (2001). Developing a scale of self-management behaviors of parents with asthmatic children in Taiwan Through triangulation method. *The Journal of Nursing Research*, 9(1), 87-89.



What are the self-management behaviors of parents with asthmatic children??

Table 2

The Classification of Self-Management Behaviors of Parent With Asthma Children

Unit	Item	Category
1a Remove the allergic triggers	1. Environmental control	Preventive behaviors
1b Avoid allergic triggers	2. Pharmacological control	
1c Facility control	3. Prevent the causes of allergy	
1d Air quality control	4. Control by regular OPD care	
1e Temperature and humidity control	5. Improve the body's defenses	
2a Preventive medication		Managing behaviors
2b Symptoms/signs medicine control		
3a Prevent influenza		
3b Prevent emotional change		
4a Regular OPD care		
5a Food control		
5b Encourage exercise		
1a Change medicine based on symptom/sign	1. Making decision based on severity	
1b Decide go to hospital	2. Pharmacological management of attack	
2a Bronchodilator	3. Non-pharmacological management of attack	
3a Give liquids		
3b Percussion		
3c Inhalation		
3d Let the child rest		
1a Assess pre-attack symptoms/signs	1. Self-observe symptoms/signs	Assessing behaviors
1b Assess attack symptoms/signs	2. Self-compare symptoms/signs	
2a Assess severity		Alternative treatment behaviors
2b Use peak flow meter		



How about the health-related quality of life of children with asthma?

- **Purpose:** describe the content and dimensions of health-related quality of life (HRQOL) among children with moderate asthma
- **Method:** Eleven children, aged 6-12 years, and their mothers from two medical centers in central Taiwan were interviewed and tape record



Exploring the Health-Related Quality of Life Among Children With Moderate Asthma

Li-Chi Chiang

ABSTRACT: Asthma is one of the most common chronic diseases, impacting more than 10% of children in Taiwan. The recurrent signs and symptoms and complexity of disease management impact the life quality of children with asthma. The purpose of this study was to describe the content and dimensions of health-related quality of life (HRQOL) among children with moderate asthma by descriptive qualitative research based on in-depth interviews. Eleven children, aged 6-12 years, and their mothers from two medical centers in central Taiwan were interviewed and tape recorded. The transcripts were analyzed using content analysis. Six themes relevant to the children's QOL with asthma were identified: (1) physical disturbances of signs/symptoms, (2) limitations of activity, (3) emotional distress, (4) discord in parent-child relationships, (5) restrictions in school social life and (6) daily inconvenience of managing the disease. These findings highlight the ways in which the overall quality of life of children is impacted by asthma including the physiological and psychosocial domains. The breadth of these findings may lead to greater insights into the nursing care of children with asthma.

Key Words: health-related quality of life, children with asthma.



Table 1.

Definition and Characteristics of Identified Themes

Theme	Definition	Characteristics
Physical disturbances from signs/symptoms	Physical disturbances caused by recurrent signs/symptoms, and effects on daytime activities and sleeping	<ul style="list-style-type: none"> • Physical disturbances from daytime signs/symptoms • Sleep disturbances from nocturnal signs/symptoms
Limitations of activity	Activity limited due to concerns over potential asthma attacks	<ul style="list-style-type: none"> • Limitations of play • Exercise limitations
Emotional distress	Depressed feelings or emotional reactions of children with asthma as perceived by children or observed by parents	<ul style="list-style-type: none"> • Depression • Unstable temper • Anxiety • Fear of asthma attacks
Discord in parent-child relationships	Arguments and other contentious interactions	<ul style="list-style-type: none"> • Parent-child friction • Conflicts between discipline and protection • Issues related to asthma control
Restrictions on school social life	Inability to participate in interactions and personal relationships at school	<ul style="list-style-type: none"> • Comparisons with others • Reduced peer interactions • Worries about school performance
Daily inconvenience in managing the disease	Regular life interrupted by complex control and management	<ul style="list-style-type: none"> • Frequent medical visits • Abstinence from certain foods or toys • Pain associated with getting shots or drawing blood • Bothersome medications



What's the differences between the parents in rural and urban?

- **Purpose:** describe the content and dimensions of health-related quality of life (HRQOL) among children with moderate asthma
- **Method:** Eleven children, aged 6-12 years, and their mothers from two medical centers in central Taiwan were interviewed and tape record



A Comparison, by Quantitative and Qualitative Methods, Between the Self-Management Behaviors of Parents With Asthmatic Children in Two Hospitals

Li-Chi Chiang • Jing-Long Huang* • Shu-Yuan Chao**

ABSTRACT: This study compared the self-management behaviors of parents with asthmatic children staying in two hospitals and explored barriers to self-management behaviors by interviewing. 227 parents were recruited for quantitative analysis by completing a self-report structured questionnaire, 94 of these parents were from the Taipei area and 133 were from the Taoyuan area. Sixteen parents were interviewed from this population. The results indicated that the parents in the Taoyuan area had younger age, lower socioeconomic status (SES), and higher exercise limitations for children. Their knowledge, enabling factors, and self-management behaviors were also lower than their counterparts in the Taipei area. The determining factors of self-management behaviors were socioeconomic status, self-efficacy, sources of education, and perceived effectiveness (Adjusted $R^2 = .593$) in 227 parents. Six major themes about the influencing factors of self-management were deduced from the interview data: lack of understanding and dislike of the asthma label, less self-perceived severity, lack of understanding about asthma medication, lack of confidence in environmental controls, financial burden of anti-mite products, and doubt about effectiveness. Three major barriers to self-management behaviors of parents in the Taoyuan area were inconsistent use of alternative treatments, overdependence on medical service, and lack of use of peak flow meter. Parents with asthmatic children living in the Taoyuan area had poorer self-management behaviors than those in the Taipei area, and SES was one of the determining factors. The health beliefs of Taoyuan parents included many misconceptions. Conducting the educational needs assessment through quantitative and qualitative methods could provide proficiency information for designing educational content appropriate to specific populations.

Key Words: asthma, parent, self-management.

Chiang, L. C., Huang, J. L., & Chao, S. Y. (2005). A comparison, by quantitative and qualitative methods, between the self-management behaviors of parents with asthmatic children in two hospitals. *The Journal of Nursing Research*, 13(2), 85-96. (DOH89-TD-1170) (TSSCI)



Six major themes about the influencing factors of self-management

- lack of understanding and dislike of the asthma label
- less self-perceived severity
- lack of understanding about asthma medication
- lack of confidence in environmental controls
- financial burden of anti-mite products
- doubt about effectiveness



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The Question about the “**Diagnosis**”

- Do the parents know self-management for parents to rear a child with asthma?
- Do the asthma impact the children’s quality of life?
- How do we know the health care providers have the ability to teach about asthma self-management for patients?



- **Research question:** What is the self-management behaviors of parents with asthmatic children??
- **Purpose:** develop a scale of self-management behaviors for parent with children and through the qualitative and quantitative methods
- **Methods:** to explore the self-management behaviors of the successful managing parent with asthma children by in-depth interviewing method

Chiang, L. C., Huang, J. L., & Chao, S. Y. (2001). Developing a scale of self-management behaviors of parents with asthmatic children in Taiwan Through triangulation method. *The Journal of Nursing Research*, 9(1), 87-89.



Developing a Scale of Self-Management Behaviors of Parents With Asthmatic Children in Taiwan Through Triangulation Method

Li-Chi Chiang • Jing-Long Huang* • Shu-Yuan Chao**

ABSTRACT

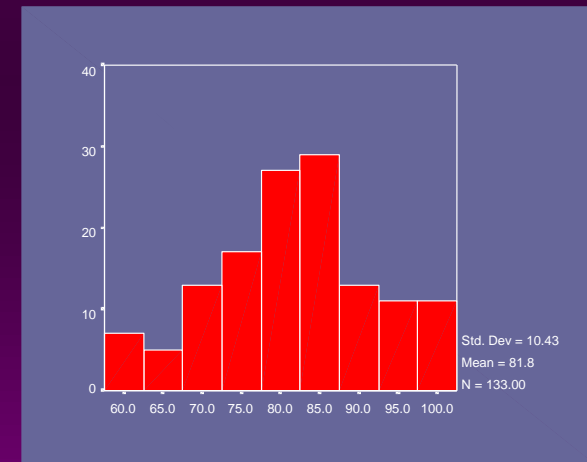
The purposes of this study were to develop a scale of self-management behaviors for parents with a sthmatic children by qualitative and quantitative methods. This research included two phases: (1) to explore the self-management behaviors of successfully managing parents with asthmatic children by in-depth interviewing method. (2) To examine the reliability and validity of self-management behaviors by the quantitative survey of 133 outpatient parents with asthmatic children. The results including four categories, 10 items and 23 self-management behaviors units were inducted from the 16 parents. The four categories are named as (1) Preventive behaviors: controlling environmental factors, taking drugs, avoiding the causes of allergy, improving the body's defenses; (2) Managing behaviors: making decision based on the severity, taking pharmacological management for attacks, and selecting non-pharmacological management for attacks; (3) Assessing behaviors: observing and comparing the symptoms/signs themselves; (4) Alternative treatment. The survey research was conducted with 21 self-management behaviors after refinement by 10 experts. Based on the survey of 133 parents with asthmatic children, the reliability of the scale was shown as Cronbach's α .88. The construct validity was established by factor analysis by rotation method with Varimax with Kaiser normalization. Three extracting components were named as preventing behaviors, managing behaviors and assessing behaviors. The cumulative percent of variance of 3 factors was 48.2%.

Key words: parents of asthmatic children, self-management, tool development, health education.



The scale of self-management behaviors for parents with asthmatic children

- 21 items self-management behaviors scale
- Validity: Factor analysis, 48.20% explained variance (Principal component analysis with Varimax with Kaiser normalization)
 - Preventing behavior: 20.37%
 - Managing behavior: 14.85%
 - Assessing behavior 12.98%
- Reliability: Cronbach's α 0.88



Chiang, L. C., Huang, J. L., & Chao, S. Y. (2001). Developing a scale of self-management behaviors of parents with asthmatic children in Taiwan Through triangulation method. *The Journal of Nursing Research*, 9(1), 87-89.



How the asthma impact the children's quality of life?

- **Research question:** How the asthma impact children's quality of life?
- **Purpose:** develop a scale to measure the asthma-related quality of life (ARQOL) among children with asthma based on the previous qualitative study results.
- **Methods:** to examine the psychometric property of ARQOL from children and parents.



Abstract

Testing a Questionnaire to Measure Asthma-Related Quality of Life Among Children

Li-Chi Chiang, Li-Fen Tzeng, Lin-Shien Fu, Jing-Long Huang

JOURNAL OF NURSING SCHOLARSHIP, 2006; 38:4, 383-386. ©2006 SIGMA THETA TAU INTERNATIONAL.

[Key words: asthma, quality of life, children, questionnaire]

* * *

Childhood asthma is one of the most prevalent chronic diseases in the world. Common treatment goals for this disease are maintaining normal development and promoting good quality of life. The quality of life of

that includes the role of family, and How Are You (HAY) is the only one that includes social activity (le Coq, Col-land, Boeke, Bezemer, & van Eijk, 2000). Varni, Burwinkle, Rapoff, Kamps, & Olson's (2004) PedQL™ 3.0 Asthma



Asthma-Related Quality of Life ARQOL Construct and concurrent validity

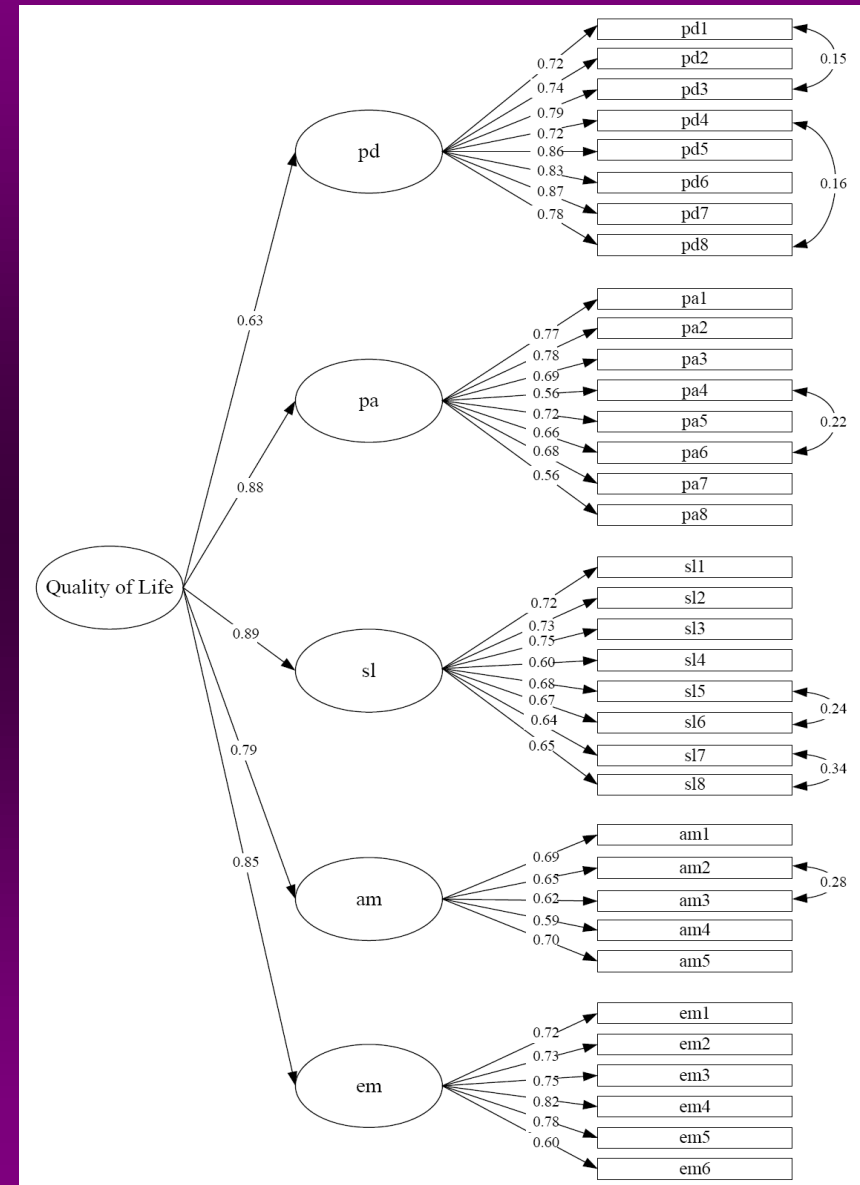
Factor Categories	Number of items	Item mean (SD)	Eigen value	Variance explained (%)	Cronbach's alpha	Asthma severity	
						F	P
Factor I: Restriction of social life	8	3.67 (0.58)	14.34	16.94	.90	2.723	.044
Factor II: Physical disturbances from signs/symptoms	8	3.13 (0.69)	3.06	15.12	.91	3.030	.029
Factor III: Limitations of physical activity	8	3.32 (0.62)	1.56	11.57	.88	7.447	.000
Factor IV: Daily inconveniences in managing the disease	5	3.23 (0.70)	1.37	8.86	.81	3.668	.012
Factor V: Emotional distress	6	3.48 (0.63)	1.03	8.53	.87	3.940	.009
Total scale				61.02	.96	5.169	.002

Chiang, L. C., Tseng, L. F., Huang, J. L., & Fu, L.S. (2006). Testing a Questionnaire to measure asthma-related quality of life among children. *Journal of Nursing Scholarship*, 38(4), 1-4.



CFA ARQOL

- **The final structural model using a second-order CFA.**
 - A. Relationship between the five latent variables (constructs) and each of their measures.
 - B. The curved 2-headed arrows indicate an association between 2 variables. The variables in the ellipses are latent constructs.
 - C. The items in the rectangular boxes are the observed items.
- 975 cases for CFA
 - o 251 children with asthma were recruited from three medical centers and 223 from six elementary schools in Taipei & Taichung.
 - o 501 children with asthma from 7 elementary schools and 5 junior high schools in Taichung





How confident the health care providers teaching about asthma management?

- **Research question:** Do the health care providers have the self-efficacy of asthma teaching?
- **Purpose:** develop a scale to measure the self-efficacy of asthma teaching (SEAT) among children with asthma based on the previous qualitative study results.
- **Methods:** to examine the psychometric property of SEAT from health care providers.



Journal of Asthma, 46:113–117, 2009
Copyright © 2009 Informa Healthcare USA, Inc.
ISSN: 0277-0903 print / 1532-4303 online
DOI: 10.1080/02770900802444245

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healthcare

ORIGINAL ARTICLE

Developing a Scale to Measure Self-Efficacy on Asthma Teaching for Health Care Providers

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Background. A number of educational programs have focused on promoting the knowledge of asthma to health care professionals, but not teaching competency. Increasing the cognition of self-efficacy on patient teaching could enhance the competency in teaching for patients with asthma. However, at present we do not have an appropriate tool to measure self-efficacy on asthma teaching for health care providers. **Objectives.** The aim of this study was to evaluate construct validity by Factor analysis and investigating dimensionality by Rasch analysis of a self-efficacy on asthma teaching scale (SEATs) among nurses in Taiwan. **Participants.** A total of 281 nurses from 3 medical centers volunteered to participate and complete the SEATs. **Methods.** A 20-item SEATs was developed including self-efficacy of general teaching and self-efficacy of specific asthma-related teaching. Instrument reliability and validity are examined by classical testing theory (item analysis, internal consistency, content validity, and construct validity). To examine whether each item in the SEATs fits the unidimensionality in the Rasch model, the Winsteps program was used to assess item difficulty, scale unidimensionality, item separation, and linearity. **Results.** SEATs has good content validity, internal consistency, and construct validity. Rasch analysis revealed that three items were problematic and need to be re-examined in further study. **Conclusion.** The first version of SEATs has an acceptable psychometric property to evaluate the asthma teaching efficacy of nurses, although three items were INFIT according to Rasch analysis. A different population of nurses should be recruited to further refine this tool. SEATs could be used as an outcome measure for further program evaluation.

Keywords asthma, education, efficacy, knowledge



DEVELOPING A SCALE TO MEASURE SELF-EFFICACY ON ASTHMA TEACHING

TABLE 1.—Self-efficacy on asthma teaching scale: factor loading for primary care nurses (N = 281).

Domains and Items	Mean	SD	C	Factor Loading			INFIT
				1	2	3	
Self-efficacy of general teaching							
1. I can correctly assess the learning needs of asthma patients.	2.89	0.85	0.64	0.743			1.10
2. I can write individualized learning objectives based on an asthma patient's unique situation.	2.70	0.88	0.75	0.720			0.76
3. I can provide appropriate instructional content, base on an asthma patient's unique situation.	2.83	0.88	0.77	0.748			0.66
4. I can select appropriate teaching strategies when encountering different asthma patients' needs.	2.74	0.91	0.70	0.725			0.55
5. I can provide asthma instruction in a clear manner that patients can understand.	2.81	0.99	0.74	0.560			0.85
6. I can correctly demonstrate self-management skills such as inhaler and peak flow meter use.	2.83	1.01	0.76	0.430			1.27
7. I have the ability to change the attitude of an asthma patient.	3.05	2.62	0.21	0.425			1.33
8. I can design teaching materials for asthma patients (e.g., posters, flyers, and website).	2.96	1.05	0.66	0.238			1.83
9. I have the ability to evaluate the effectiveness of an asthma patient's self-management efforts when he/she returns to a clinic for a visit.	2.80	0.91	0.79	0.482			0.65
10. I can refine teaching content and methods based on an asthma patient's learning results and confounding factors.	2.87	0.89	0.78	0.511			0.55
Self-efficacy of specific asthma-related teaching							
11. I can influence patients to modify their home environments by teaching asthma environmental control.	2.85	0.88	0.56		0.668		1.63
12. I can give instruction on methods to reduce or eliminate allergens based on individual needs.	3.12	0.93	0.74		0.804		1.05
13. I can teach asthma patients to tell the difference between asthma medications and to use the right one at the right time.	3.00	0.94	0.78		0.624		0.85
14. I can teach asthma patients to choose the correct emergency self-management technique when an asthma attack occurs.	2.74	0.98	0.77		0.675		0.85
15. I can teach asthma patient to quickly make a proper decision on whether to go to a hospital when an asthma attack occurs.	2.62	0.99	0.76		0.793		0.77
16. I can provide appropriate support for helping asthma patients learn and practice life adaptations.	2.71	1.03	0.77		0.750		0.70
Self-efficacy of peak flow meter teaching							
17. I can teach asthma patients to correctly use a peak flow meter and determine the best recordings.	2.70	1.01	0.77			0.816	0.76
18. I can teach asthma patients how to compute peak expiratory flow variability for morning and night.	2.93	0.96	0.81			0.853	0.70
19. I can teach asthma patients how to record correct peak expiratory flows in their asthma diaries.	3.06	0.95	0.76			0.803	0.79
20. I can teach asthma patients to choose the correct self-management response based on the red, yellow, and green light system.	3.04	0.94	0.74			0.769	0.41
Cronbach's Alpha (total scale alpha = 0.94)				0.91	0.92	0.95	
Explained variance				21.39	25.13	24.30	
Total explained variance				70.81			

C = corrected item-total correlation.



The reliability and validity of SEAT

- The reliability and validity is acceptable with a good reliability (KR 20= 0.52 for knowledge, Cronbach's alpha 0.91~ 0.95 for each efficacy domain)
- Overall CVI ranged from .88 to 1.00.
- Construct validity for teaching-efficacy by factor analysis, total explained variance 70.81%
 - General teaching efficacy---21.39%
 - Teaching efficacy of asthma management---25.13 %
 - Teaching efficacy of PEF meter---24.30%

Chiang, L. C., Hsu, J. Y., Yeh, K. W., Liang, W. M., Huang, J. L.* (2009).

Developing a scale to measure self-efficacy of asthma teaching for health care providers. *Journal of Asthma*, 46(2), 113-117. (Impact Factor 1.324, **SCI**, Rank 12/17 in Allergy)



The Question about the “**Etiologies**”

- 1. What is the determinants of the self-management behaviors among parents with asthmatic children ?
- 2. Does the physical activity among children with asthma different with the healthy children?
- 3. What are the influencing factors of physical activities of children with asthma?



1. What is the determinants of the self-management behaviors among parents with asthmatic children ?



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Patient Education and Counseling 49 (2003) 19–25

Patient Education
and Counseling

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Educational diagnosis of self-management behaviors of parents with asthmatic children by triangulation based on PRECEDE–PROCEED model in Taiwan

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Received 4 September 2001; received in revised form 8 January 2002; accepted 11 January 2002

Abstract

This assessment study is an educational and behavioral diagnosis based on the PRECEDE–PROCEED model which identifies factors (predisposing, enabling, and reinforcing) that must be changed to initiate and sustain the self-management behaviors of parents with asthmatic children (aged 3–14 years) in the largest children's hospital in northern Taiwan. In the first step, 21 self-management behaviors were induced from the content analysis of qualitative interviews of 16 successful parents. The construct validity of 21 self-management behaviors was established by principal component factor analysis, followed by the rotation method with Varimax and Kaiser normalization. Three extracted



Educational assessment

- **Research question:** What is the determinants of the self-management behaviors among parents with asthmatic children ?
 - **Predisposing factor ?**
 - **Reinforcing factors ?**
 - **Enabling factors ?**

Chiang, L. C., & Huang, J. L. Lu, C. M. (2003). Educational diagnosis of self-management behaviors of parents with asthmatic children by triangulation based on PRECEDE-PROCEED model in Taiwan. *Patient Education and Counseling*, **49**(1), 19~25. (Impact Factor 1.286, **SSCI, Rank 3/55**)

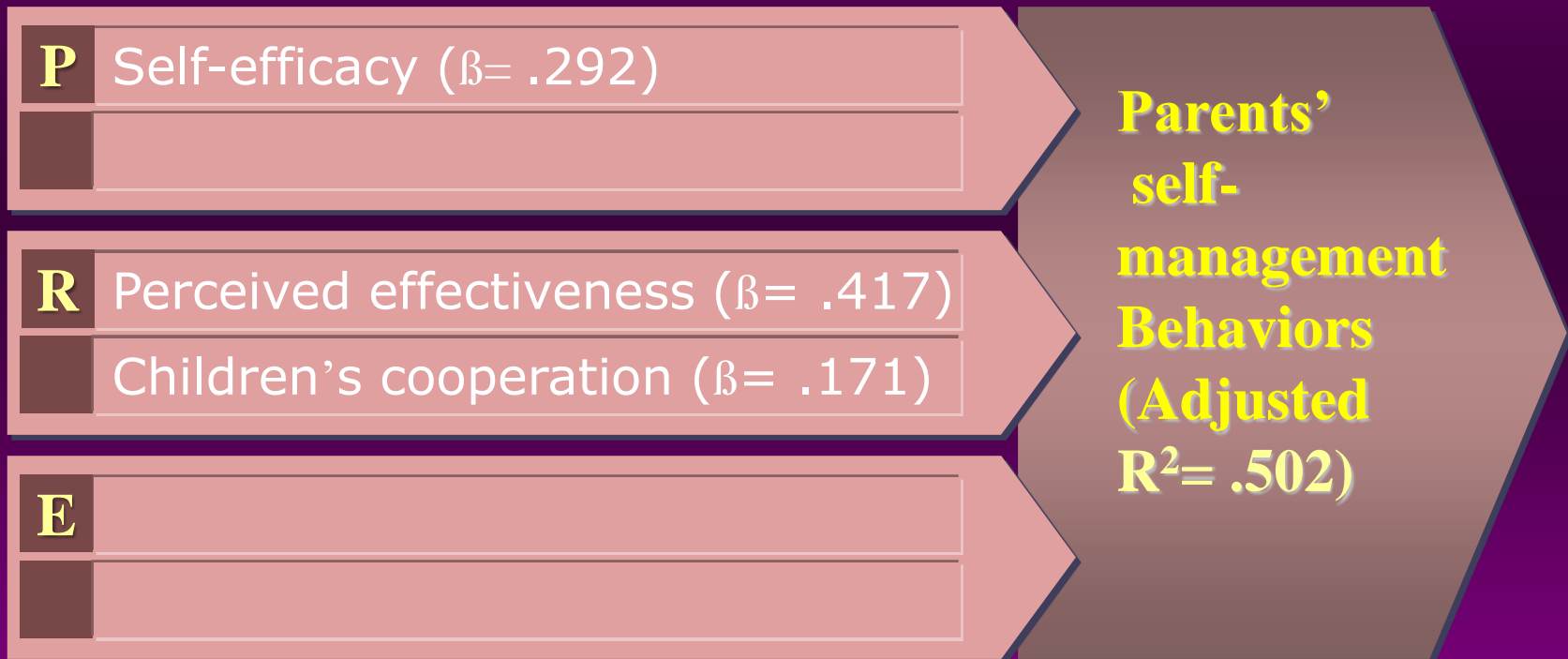


Result: influencing factors

- **Predisposing factors**
 - Perceived severity $r = .168$
 - Asthma knowledge $r = .262^{**}$
 - Asthma attitude $r = .390^{**}$
 - Self-efficacy $r = .536^{**}$
- **Reinforcing factors**
 - Family support $r = .203^*$
 - Health profession support $r = .241^{**}$
 - Doctor-patient communication $r = .352^{**}$
 - Perceived effectiveness $r = .635^{**}$
 - Children's cooperation $r = .458^{**}$
- **Enabling factors**
 - Facilities of environmental control $r = .138$
 - Convenience of transportation $r = .129$
 - Education required $r = .130$



The determinants of self-management





Determinants of self-management behaviors

Influencing factors	Preventive behaviors (11 items)		Managing behaviors (7 items)		Assessing behaviors (3 items)	
	β	p	β	p	β	p
Predisposing Perceived severity				.	.186	.013**
Knowledge					.289	.000***
Self-efficacy	.292	.000***			.221	.012**
Reinforcing Perceived effectiveness	.343	.000***	.189	.000***	.202	.016**
Children's cooperation	.225	.003**				
F	36.145***		47.213***		15.687***	
R ²	.679		.518		.577	
Adjusted R ²	.448		.262		.311	



Does the physical activity among children with asthma different with the healthy children?

- **Purpose:** comparing levels of physical activity and physical self-concepts between children with and without asthma
- **Method:** 120 children between the ages of nine to twelve with mild and moderate asthma were recruited from three pediatric asthma clinics in Taiwan, and 309 non-asthmatic children in the same age group were selected from four elementary schools in Taiwan's three largest cities.
- **Instruments:** 3-dPAL and physical self-concept



ISSUES AND INNOVATIONS IN NURSING PRACTICE

Physical activity and physical self-concept: comparison between children with and without asthma

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CHIANG L.-C., HUANG J.-L. & FU L.-S. (2006) *Journal of Advanced Nursing* 54(6), 653–662

Physical activity and physical self-concept: comparison between children with and without asthma

Aim. This paper reports a study comparing levels of physical activity and physical self-concepts between children with and without asthma.

Background. Childhood asthma has become one of the world's most prevalent chronic illnesses. Its symptoms are thought to prevent children from participating in



Comparison of physical activity between children with asthma and healthy children based on international recommendations

Recommendations	Yes/ No	Total (N=427)		Asthma (n=120)		Non- Asthma (n=307)		χ^2	Odds (95% confidence Interval)	<i>p</i>
		n	%	n	%	n	%			
1994 <i>Physical Activity Guidelines for Adolescents^a</i> (MVPA \geq 90min/week)	Yes	396	(92.7)	110	(91.7)	286	(93.2)	0.703	1.238 (0.565~2.713)	0.744
<i>Healthy People 2010 Objective No. 22.6</i> (MVPA \geq 150min/week)	Yes	389	(91.1)	106	(88.3)	283	(92.2)	1.830	1.557 (0.777~3.123)	0.287
<i>United Kingdom Expert Consensus Group^b</i> (MVPA \geq 420min/week)	Yes	342	(80.1)	93	(77.5)	249	(81.1)	5.956	1.246 (0.745~2.086)	0.482
<i>Healthy People 2010 No. 22.7 Objective</i> (VPA \geq 60min/week)	Yes	291	(68.1)	68	(56.7)	223	(72.6)	7.514	2.030 (1.308~3.151)	0.002*



Does the physical activity among children with asthma different with the healthy children?

- **Results:**
 - Asthma was the primary factor determining vigorous physical activity levels
 - Gender was the primary factor determining physical self-concept



Factors Influencing Physical Activity Levels in Children with Asthma

Shao-Keh Hsu, Lin-Shien Fu¹, Jing-Long Huang², Li-Chi Chiang³

Division of Orthopedic, Tung's Taichung MetroHarbor Hospital, Taichung; ¹Division of Pediatrics, Taichung Veterans General Hospital, Taichung; ²Division of Allergy Asthma and Rheumatology, Chang Gung Children's Hospital, Taipei; ³School of Nursing, China Medical University, Taichung, Taiwan.

Purpose. The purposes of this study were to assess the amount of physical activity children with asthma participate in and to explore the factors which influence their levels of physical activity.

Methods. A total of 152 children with asthma, ranging in age from 8 to 11 years, were enrolled in this study. The amount of physical activity for each child was gathered from self-reported 3-day physical activity logs (3d-PAL). Personal, diseased-related, psychological and environmental factors influencing physical activity were gathered from questionnaires completed by children and from parent interviews.

Results. Only 32.9% of children with asthma took part in 20 minutes or more of vigorous physical activity (VPA) more than three times per week, much less than the 85% participation rate advised by the Healthy People 2010 objectives. Access to exercise facilities, exercise-induced attack (EIA), and gender were predictors of moderate-to-vigorous physical activity (MVPA) ($p < 0.001$). Children with more access to exercise facilities ($p < 0.01$) and fewer episodes of EIA ($p < 0.01$) were more likely to engage in MVPA; furthermore, boys with asthma participated more in MVPA than girls ($p < 0.01$). Access to team sports was the determinant of VPA ($p < 0.05$).

Conclusions. Inactive children with asthma need appropriate exercise prescriptions to increase physical activity. Pediatric practitioners can enhance physical activity by advising parents to improve access for their children to exercise facilities, prescribing appropriate treatment for EIA, and encouraging girls with asthma to be more active. (*Mid Taiwan J Med* 2006;11:205-13)

Key words

asthma, children, EIA, MVPA, physical activity



Table 2. Comparison of the influence of exercise-induced attack (EIA) and gender on physical activity (min/wk) in children with asthma

Physical activity	Moderate-vigorous physical activity	Vigorous physical activity
Total	157.06 (159.57)*	58.05 (81.41)
Boys		
EIA (n = 48)	135.70 (137.65)	59.06 (85.97)
Non-EIA (n = 51)	214.63 (204.12)	66.69 (81.69)
<i>p</i>	0.027	0.652
Girls	†	
EIA (n = 15)	108.75 (104.35)	48.25 (64.67)
Non-EIA (n = 36)	126.35 (110.65)	46.35 (80.89)
<i>p</i>	0.601	0.936

*Mean ± SD. †*p* < 0.05.

Table 3. Stepwise multiple regression of physical activity (min/wk) in children with asthma

Predictor	Moderate-vigorous physical activity (β)	Vigorous physical activity (β)
Access to exercise facilities	0.235 [†]	
EIA	-0.237 [†]	
Gender	-0.204*	
Access to sport teams		0.193*
<i>R</i> ²	0.130	0.037
<i>p</i>	< 0.0001	0.017

**p* < 0.01, †*p* < 0.001.



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The Question about the “**Treatment**”

- 1. How the effects of Asthma Camp on predisposing factors on children with asthma?
- 2. How the effects of nurse-led hospital based asthma education on parents?
- 3. How ?
- 4. 鬆弛技巧對中重度氣喘兒童焦慮之成效?



Asthma Summer Camp

Research question:

- How the effects of Asthma Camp on predisposing factors on children with asthma
- Paired-t test

Table 6

Comparison of Asthma Knowledge, Attitudes, Self-Efficacy in Pre-and Post-Summer Camp

Item	<u>M</u>		<u>SE</u>		Paired t-test
	Pre-test	Post-test	Pre-test	Post-test	
Asthma knowledge (n = 56)	11.089	13.482	0.405	0.336	- 7.146***
Asthma attitudes (n = 49)	61.163	62.714	0.990	0.898	- 1.590
Asthma self-efficacy (n = 53)	26.076	28.340	0.709	0.730	- 4.266***

***p < 0.001

Chiang, L. C., Huang, J. L., & Lu, C. M. (1999). A study of predisposing factors and self-management behaviors of school-age children with asthma and the impact of summer asthma camp. *Journal of Nursing Research*, 7(4), 307-320.



Tailoring the appropriate hospital-based health education

- **Research problem:** Could health education change the determinants and promote the self-management behaviors for parents with asthmatic children
- **Method:** Quasi-experimental study design



Design the educational program

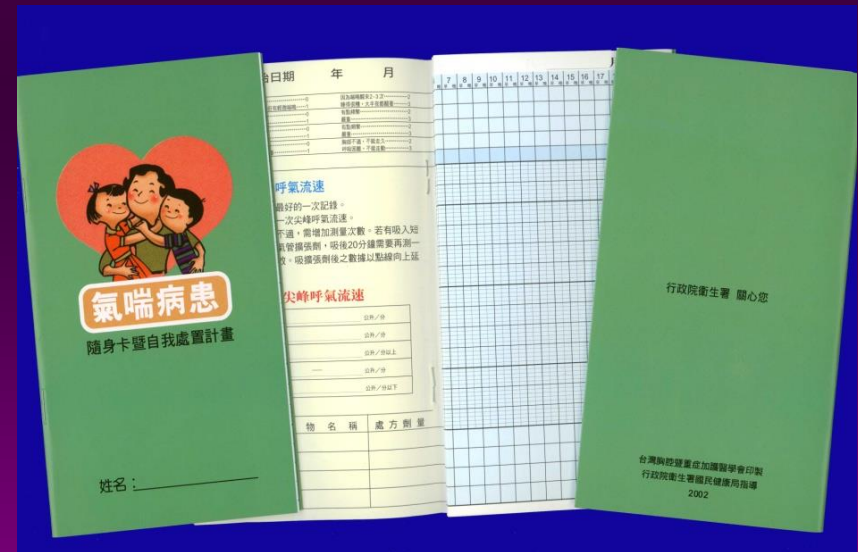
- **Lecture: Physician and Nurses**
 - Reinforcing the cognition about the disease severity and
- **Successful managing parents: Sharing the experiences**
 - Promoting the self-efficacy
 - Increase the ability to cooperate with their children
- **Group discussion**
 - Reinforcing the effectiveness of asthma control
- **Making contract: Increase the self-efficacy**





The personal management plan

- The process of individualized teaching plan (teaching assessment, personal objectives,
- The person-appropriate teaching strategies, and the period evaluation,
- and the skills of using various inhaler and Peak Flow Meter





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Treatment

JOURNAL OF ASTHMA
Vol. 41, No. 2, pp. 205–215, 2004

ORIGINAL ARTICLE

Effects of a Self-Management Asthma Educational Program in Taiwan Based on PRECEDE-PROCEED Model for Parents with Asthmatic Children

**Li-Chi Chiang, Ph.D.,¹ Jing-Long Huang, M.D.,^{2,3,*} Kuo-Wei Yeh, M.D.,^{2,3}
and Chang-Ming Lu, Ph.D.⁴**

¹Department of Nursing, China Medical College, Taichung, Taiwan

²Division of Allergy Asthma and Rheumatology, Department of Pediatrics,
Chang Gung Children's Hospital and ³Chang Gung University, Taoyuan, Taiwan

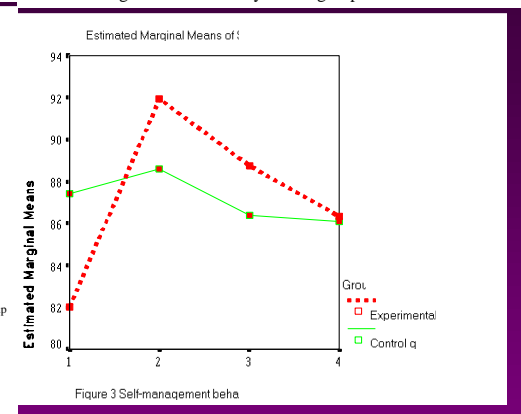
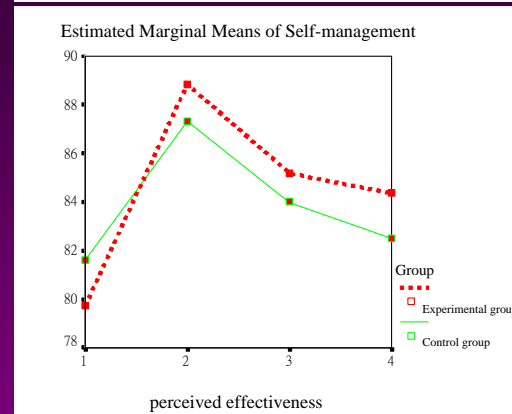
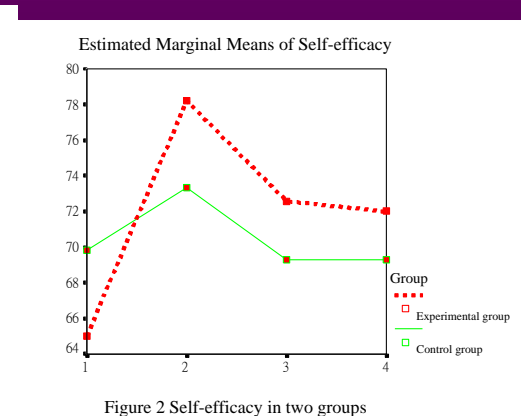
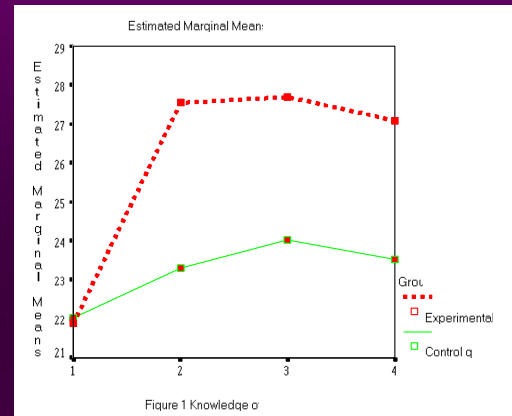
⁴Department of Health Education, National Taiwan Normal University, Taipei, Taiwan

ABSTRACT



Results: educational outcomes

- Asthma knowledge ↑
- Self-efficacy ↑
- Perceived effectiveness ↑
- Children's cooperation ↑
- Self-management ↑

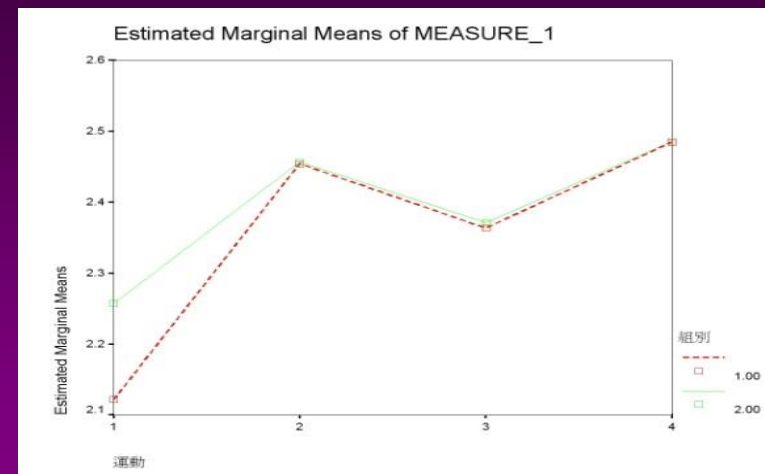
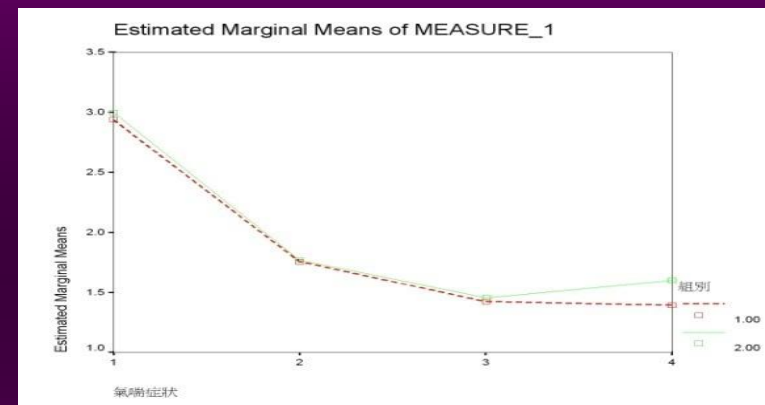


Chiang, L. C., Huang, J. L. Yeh, G. W., & Lu, C. M. (2004). Effects of a self-management asthma educational program in Taiwan based on PRECEDE-PROCEED MODEL for parents with asthmatic children. *Journal of Asthma*, 41(2), 205-215. (Impact Factor 1.043, *SCI*, Rank 7/15)



Results: Health outcomes

- Medication use
- Medical utilization
- Asthma severity
- Asthma sign/symptom
- School absences
- Physical activity





Patient-Centered Care

- **Research problem:** Could PCC in outpatient asthma clinic could change the home environmental control behaviors and deviate the lung function and asthma signs/symptoms of children with asthma
- **Method:** Quasi-experimental study design



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Treatment

JCN

Journal of Clinical Nursing

Journal of
Clinical Nursing

CHILDREN AND ADOLESCENT NURSING

A preliminary study to evaluate a patient-centred asthma education programme on parental control of home environment and asthma signs and symptoms in children with moderate-to-severe asthma

Li-Fen Tzeng, Li-Chi Chiang, Kai-Chung Hsueh, Wei-Fen Ma and Lin-Shien Fu

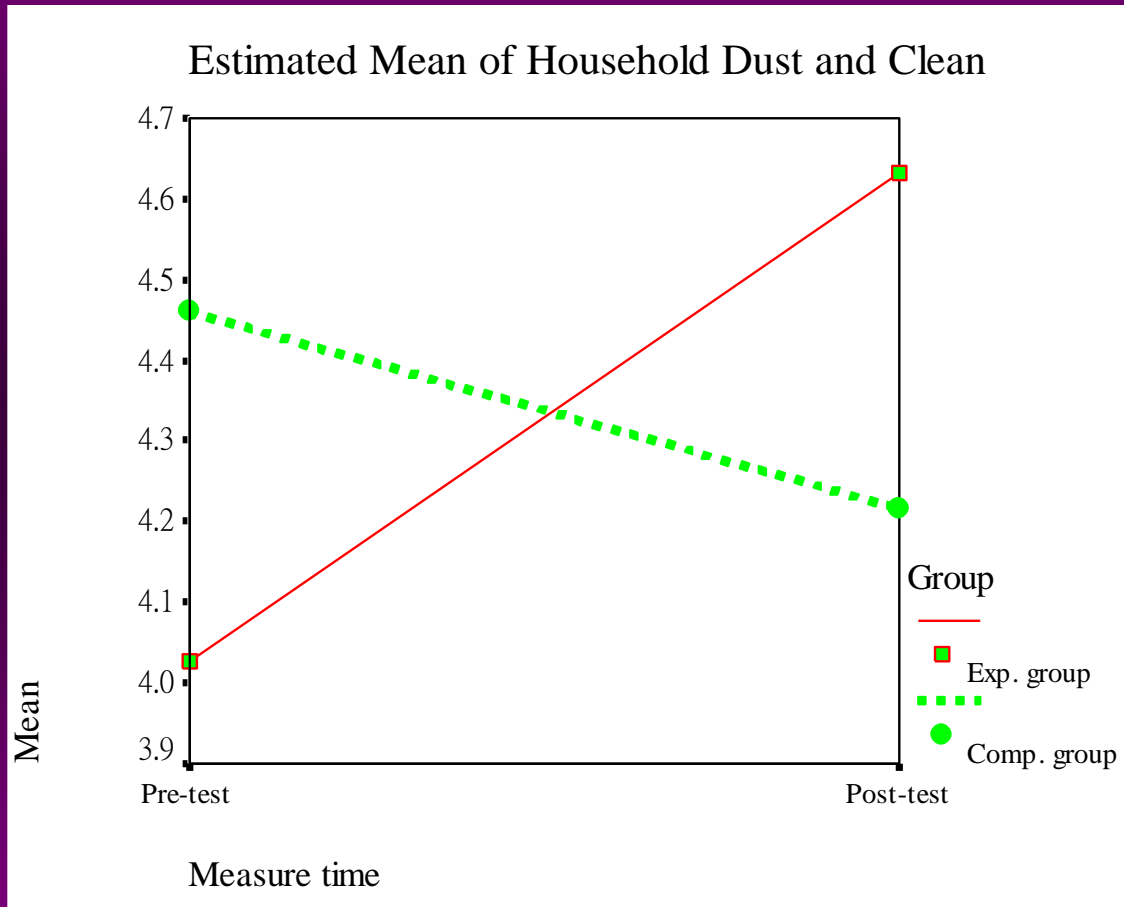
Aims and objectives. To evaluate the effectiveness of a nurse-led patient-centred asthma education programme on home environmental control behaviours of parents of children with moderate or severe asthma.

Background. Reducing allergic triggers is important self-management behaviour for preventing asthma attacks and patient-

Tzeng, L. F., **Chiang, L. C.***, Hsueh, K. C., Ma, W. F., & Fu, L. S., (2010). A Preliminary Study to Evaluate a Patient-Centered Asthma Education Programme on Parental Control of Home Environment and Asthma Signs and Symptoms in Children with Moderate-to-Severe Asthma. *Journal of Clinical Nursing*, 19, 1424–1433.



Pre-test
 $t=-1.207$
 $p=.231$

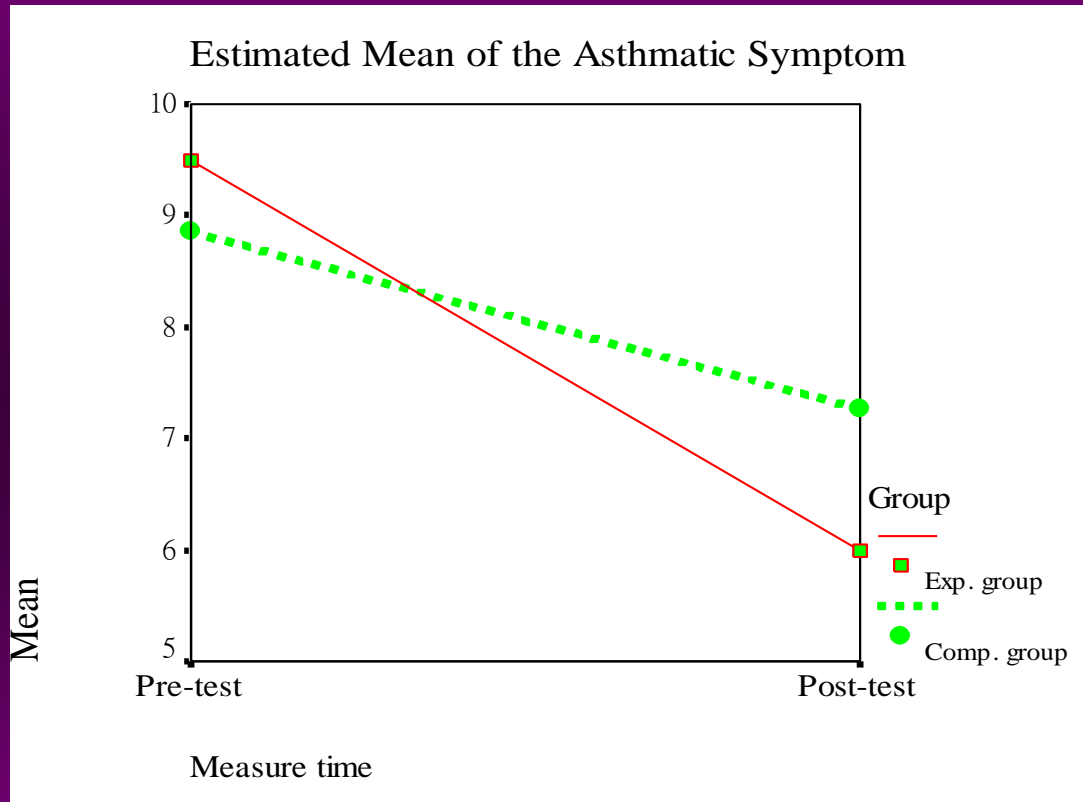


Post-test
 $t=1.374$
 $p=.174$

Interaction $F_{IN}=5.358, p=.023$



Pre-test
 $t=1.176$
 $p=.243$

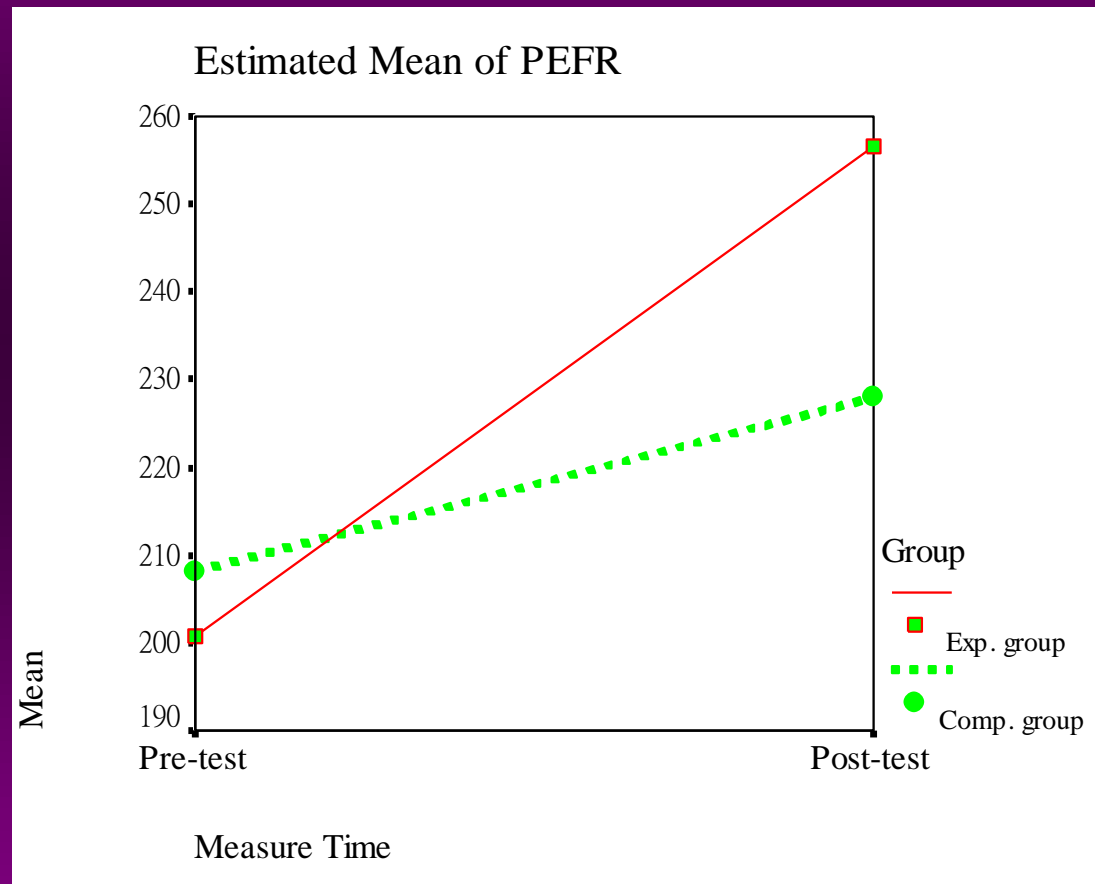


Post-test
 $t=-2.411$
 $p=.018$

Interaction $F_{IN}=5.956, p=.017$



Pre-test
 $t=0.302$
 $p=.764$



Post-test
 $t=3.122$
 $p=.003$

Interaction $F_{IN}=6.648, p=.012$



Breathing relaxation

- **Research problem:** Could breathing relaxation could change the emotional anxiety of children with asthma
- **Method:** Randomized Control Trial

Chiang, Li-Chi*, Ma, Wei-Fen, Huang, Jing-Long, Tseng, Li-Feng, Hsueh, Kai-Chung (2009).
Effect of relaxation-breathing training on anxiety and asthma signs/symptoms of children with moderate-to-severe asthma: a randomized controlled trial.
International Journal of Nursing Studies, 46(2009), 1061-1071.

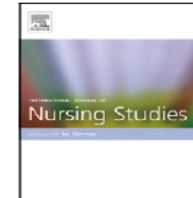


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International Journal of Nursing Studies

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Effect of relaxation-breathing training on anxiety and asthma signs/symptoms of children with moderate-to-severe asthma: A randomized controlled trial

Li-Chi Chiang^{a,*}, Wei-Fen Ma^a, Jing-Long Huang^b, Li-Feng Tseng^c, Kai-Chung Hsueh^d

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^bDivision of Allergy, Asthma and Rheumatology, Department of Pediatrics, Chang Gung Children's Hospital and Chang Gung University, Taoyuan, Taiwan, ROC

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ARTICLE INFO

Article history:

Received 14 August 2008

Received in revised form 12 January 2009

Accepted 24 January 2009

Keywords:

ABSTRACT

Background: Emotional stress triggers and exacerbates asthma in children. Reducing anxiety in adults by relaxation-breathing techniques has been shown in clinical trials to produce good asthma outcomes. However, more evidence is needed on using this intervention with asthmatic children.

Objective: To evaluate the effectiveness of combined self-management and relaxation-breathing training for children with moderate-to-severe asthma compared to self-

Chiang, Li-Chi*, Ma, Wei-Fen, Huang, Jing-Long, Tseng, Li-Feng, Hsueh, Kai-Chung (2009). Effect of relaxation-breathing training on anxiety and asthma signs/symptoms of children with moderate-to-severe asthma: a randomized controlled trial. *International Journal of Nursing Studies*, 46(2009), 1061-1071.



Outcome variable	β	SE	t	p	95% Confidence Interval	
					Upper	Lower
Children's anxiety						
Experimental group (Comparison group)	-7.44	4.33	-1.72	.091	-16.10	1.22
Pre-intervention (Post-intervention)	-2.68	2.83	-0.95	.347	-8.34	2.98
Group × Time interaction	9.21	4.05	2.27	.027	1.11	17.32
CCMAS						
Experimental group (Comparison group)	-4.07	2.52	-1.62	.111	-9.10	0.97
Pre-intervention (Post-intervention)	-1.55	1.61	-0.96	.340	-4.78	1.67
Group × Time interaction	5.96	2.51	2.58	.012	1.34	10.59
GASCC						
Experimental group (Comparison group)	-3.44	2.15	-1.60	.115	-7.74	0.86
Pre-intervention (Post-intervention)	-1.08	1.50	-0.72	.475	-4.07	1.92
Group × Time interaction	3.31	2.13	1.56	.124	-0.93	7.56



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The examples of mentoring

International Journal of Nursing Studies 49 (2012) 1230–1242

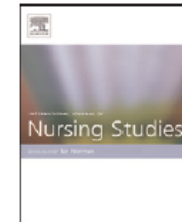


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The effectiveness of telehealth care on caregiver burden, mastery of stress, and family function among family caregivers of heart failure patients: A quasi-experimental study

Li-Chi Chiang^a, Wan-Chou Chen^b, Yu-Tzu Dai^{b,c}, Yi-Lwun Ho^{d,*}

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^bDepartment of Nursing, National Taiwan University Hospital, Taipei, Taiwan

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ARTICLE INFO

Article history:

Received 31 July 2011

ABSTRACT

Background: Telehealth care was developed to provide home-based monitoring and support for patients with chronic disease. The positive effects on physical outcome have



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The examples of mentoring

Journal of
Clinical Nursing

WOMEN AND CHILDREN

Effectiveness of hand-washing teaching programs for families of children in paediatric intensive care units

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Submitted for publication: 30 October 2005

Accepted for publication: 6 March 2006

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CHEN Y-C & CHIANG L-C (2007) *Journal of Clinical Nursing* 16, 1173–1179
Effectiveness of hand-washing teaching programs for families of children in paediatric intensive care units

Aims. The authors developed a video-centred teaching program based on social learning principles to demonstrate hand-washing technique. A comparison was made between families who viewed the video and families who were taught the same techniques with the aid of an illustrated poster in terms of compliance and



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The examples of mentoring

Journal of Nursing Research Vol. 16, No. 3, 2008

Effects of Postpartum Exercise Program on Fatigue and Depression During “Doing-the-Month” Period

Yi-Li Ko • Chi-Li Yang* • Li-Chi Chiang**

ABSTRACT: This study explored the effectiveness of an exercise program on reducing levels of fatigue and depression among postpartum women who were “doing-the-month” in a maternity center in Taiwan. Previous studies related to postpartum have focused on depression rather than women’s feelings of fatigue, and no study related to exercise has previously been conducted in a Taiwan maternity center. A low-intensity exercise program was specifically designed and administered to 31 subjects in the study’s intervention group. Another 30 subjects (the control group) followed a traditional, non-physically active postpartum care regimen. Those in the intervention group were required to participate in at least 6 exercise program sessions during their one month postpartum stay. All subjects were asked to fill out a fatigue and depression questionnaire before and after the program. A Fatigue Symptom Checklist (FSC) was used to measure fatigue, and the Center for Epidemiological Studies Depression (CESD) was used to confirm the development of depression. Results showed statistically significant differences between the two groups in terms of fatigue levels, with statistical improvements ($p < .05$) registered by the intervention group in terms of levels of physical and psychological fatigue and fatigue symptoms. However, no significant changes in depression between



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The examples of mentoring

82 *Journal of Pain and Symptom Management*

Vol. 32 No. 1 July 2006

Original Article

Student Nurses' Knowledge, Attitudes, and Self-Efficacy of Children's Pain Management: Evaluation of an Education Program in Taiwan

Li-Chi Chiang, RN, PhD, Hsiu-Jung Chen, RN, MSN, and Lichi Huang, RN, EdD
*School of Nursing (L.-C.C., L.H.), China Medical University; and School of Nursing (H.-J.C.),
Taiwan National University, Taiwan, Republic of China*

Abstract

The purpose of this study was to examine the effectiveness of a pediatric pain education program (PPEP) for student nurses. The sample consisted of 181 licensed student nurses who were enrolled in a nursing school in Taiwan. Student nurses attended a 4-hour PPEP that involved case scenario discussion, video, and lecture. Data were collected by an extensive questionnaire that assessed student nurses' knowledge of, attitudes toward, and self-efficacy in pediatric pain assessment and pharmacological and nonpharmacological pain management. The results demonstrated that student nurses gained significant knowledge of pediatric pain, expressed more appropriate attitudes, and reported greater self-efficacy in



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The responsibility of nurses to teach patients with asthma



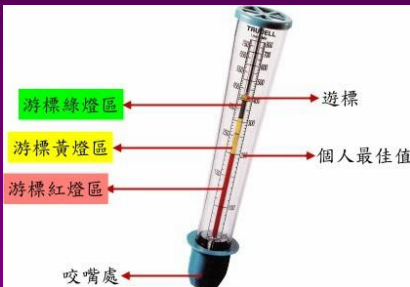
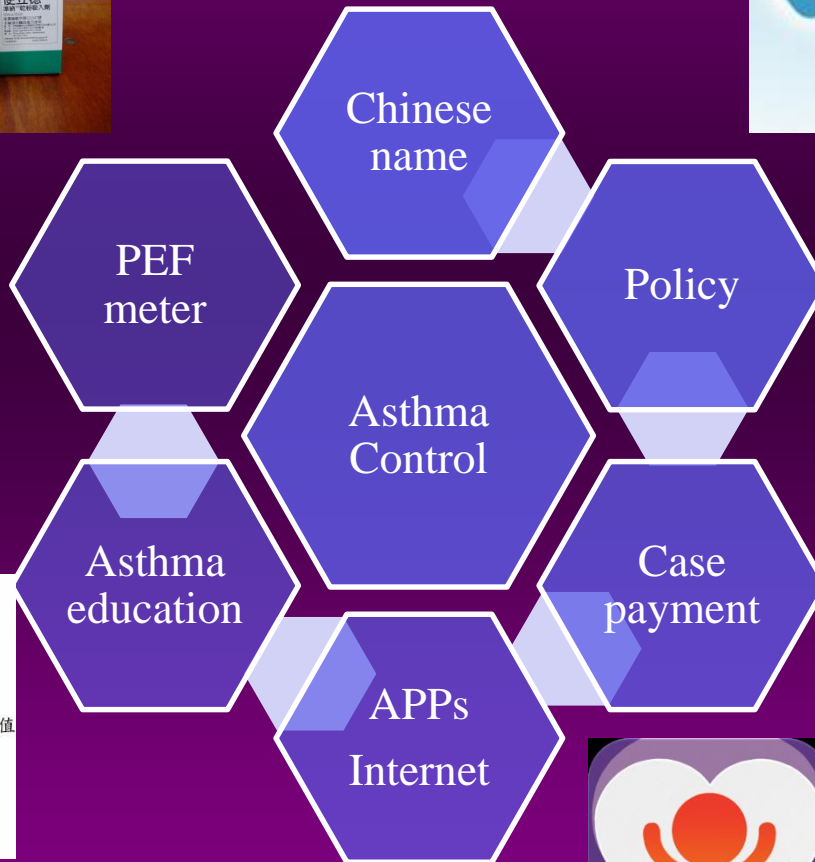
Chronic disease case management now have the insurance reimbursement



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How far we can do?





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On-going research

- Family-centered care
- Developmental care
- Multiple care model
- Inter-disciplinary care
- Closing the gap: From evidence to practice



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We are

*Nursing
Scientist*

We care

*Nursing
Profession*

We share

*Nursing
knowledge*





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Thanks for your attention~