Effects of A Disease Management Program for Individuals with Asthma

Chi-Hsuan Asphodel Yang, PhD, RN
Department of Nursing, National Taicnhung University of Science and Technology, Taichung, Taiwan

Wan-Fen Chiou, MSN, RN, NP
Department of Children, Chung Shan Medical University Hospital, Taichung City 40201, Taiwan

中山醫學大學附設醫院
Chung Shan Medical University Hospital

國立臺中科技大學
NATIONAL TAICHUNG UNIVERSITY OF SCIENCE AND TECHNOLOGY

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Background

- Asthma is a serious global health problem affecting all age groups with increasing prevalence and raising treatment costs.

- The prevalence of asthma in different countries varies widely, but the disparity is narrowing due to rising prevalence in low and middle income countries and plateauing in high income countries

- An estimated 300 million people worldwide suffer from asthma, with 250,000 annual deaths attributed to the disease.

- It is estimated that the number of people with asthma will grow by more than 100 million by 2025

Background

- To enhance the care of individuals with asthma, National Health Insurance Administration in Taiwan implemented "Asthma Management Program" in 2001.

- Since then, numerous studies had conducted to evaluate the effect of the program, focusing on the effect of medical utilization with either short –term or one-time follow-up,

- Yet only scant studies have focused on the outcomes such as self-care ability, asthma control and quality of life.

Disease Management

- A system of coordinated healthcare interventions and communications for populations with conditions in which patient self-care efforts are significant.
    - As developed by the Disease Management Association of America (2001)

- The main goal of disease management should be to improve the quality of care and patient outcomes
    - Recommended by the AHA's Expert Panel on Disease Management (2002)

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Purpose of Study

- To explore the effects of a disease management program on individuals with asthma, in terms of:
    - Self care ability
    - Asthma control
    - Quality of life
- To explore the possible predictors of the study program

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Methods

- Study Design
  - Cohort study design
- Sampling
  - convenient sampling method.
  - Aged 18 and above
  - enrolled in the Asthma Management Program at a medical center in Central Taiwan

Methods

- Research instruments
    - Adult Asthma Self-Care Behavior Scale (Liu, 2005)
    - Asthma Control Test
    - Asthma Quality of Life Questionnaire (Juniper, 2005)
    - Demographic Data Sheet
- Data Collection
    - collected at before enrollment of the program
    - 1- , 3- and 6-month after enrollment.

Results—Participants Profile

	N (%)
Sex	
Male	14 (46.7)
Female	16 (53.3)
Age	
18~30	5 (16.7)
31~40	6 (20.0)
41~50	8 (26.7)
51~65	6 (20.0)
65 and above	5 (16.7)
Smoking	
Yes	5 (18.5)
No	22 (82.5)

Results—Participants Profile

	N (%)
Disease Severity	
light	6 (20.7)[a,b]
moderate	19 (65.5)
sever	4 (13.8)
Time with Asthma	
0-10 yrs.	14 (48.3)[a]
11-20 yrs.	11 (37.9)
21-30 yrs.	4 (13.8)
Asthma related Hospitalization for the past 3 months	
Yes	5 (17.2)[a]
No	24 (82.8)

Results: Adult Asthma Self-Care Behavior

	Pre-	Post-Enrollment					
	(M±SD)	1 mo. (M±SD)	t	3 mos. (M±SD)	t	6 mos. (M±SD)	t
Medication Compliance	5.30 ±2.09	6.47 ± 1.74	-4.68*	8.07 ± 1.78	-8.73*	9.27 ± 1.51	-9.65*
Self-Monitor	10.27 ± 4.58	14.33 ± 4.46	-7.47*	18.37 ± 5.17	-8.90*	21.17 ± 5.05	-10.15*
Environmental Control	15.07 ± 6.74	21.23 ± 5.85	-6.34*	27.57 ± 5.36	-10.39*	31.73 ± 4.25	-11.57*
Return for Follow up	4.23 ± 2.05	6.17 ± 2.04	-5.21*	8.20 ± 1.73	-8.80*	9.47 ± 1.14	-12.38*
Exercise	7.97 ± 3.64	11.93 ± 4.70	-4.69*	16.73 ± 5.23	-8.82*	20.07 ± 4.58	-13.58*

$p < .01$

Results: Adult Asthma Self-Care Behavior

- Self-Care Behavior change of participants at pre- and post enrollment at 1-, 3-, 6-month, using repeated measure method (ANOVA)

	df	F	P
Medication Compliance	3	38.26	< 0.01
Self-Monitor	3	32.28	< 0.01
Environmental Control	3	48.27	< 0.01
Return for Follow up	3	51.34	< 0.01
Exercise	3	69.55	< 0.01
Self-Care Behavior	3	61.10	< 0.01

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Results: Asthma Control

	Pre-	Post-Enrollment					
	(M±SD)	1 mo. (M±SD)	t	3 mos. (M±SD)	t	6 mos. (M±SD)	t
Impacts on daily life	2.23 ± 0.94	2.83 ± .079	-5.29*	3.50 ± 0.82	-8.38*	4.47 ± 0.63	-12.16*
Frequency of asthma attach	2.53 ± 1.07	3.20 ± 1.00	-6.02*	3.77 ± 0.68	-7.22*	4.63 ± 0.56	-10.52*
Impacts on sleep	2.27 ± 1.08	2.93 ± 1.05	-6.02*	3.70 ± 0.88	-7.80*	4.53 ± 0.63	-10.33*
Frequency of reliving drugs	2.43 ± 1.07	3.17 ± 0.95	-6.28*	3.90 ± 0.76	-8.25*	4.60 ± 0.50	-10.93*
Self perception of asthma control	2.27 ± 1.05	2.77 ± 1.01	-4.79*	3.63 ± 0.77	-8.80*	4.53 ± 0.57	-12.23*
Overall asthma control	11.73 ± 4.86	14.90 ± 4.37	-7.43*	18.50 ± 3.40	-9.42*	22.77 ± 2.66	-12.27*
							* $p < .01$

Results: Asthma Control

- Asthma Control change of participants at pre- and post enrollment at 1-, 3-, 6-month, using repeated measure method (ANOVA)

	df	F	P
Impacts on daily life	3	48.22	< 0.01
Frequency of asthma attach	3	40.87	< 0.01
Impacts on sleep	3	37.19	< 0.01
Frequency of reliving drugs	3	38.16	< 0.01
Self perception of asthma control	3	47.35	< 0.01
Overall asthma control	3	52.15	< 0.01

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Results: Asthma Quality of Life

	Pre-	Post-Enrollment					
	(M±SD)	1 mo. (M±SD)	*t*	3 mos. (M±SD)	*t*	6 mos. (M±SD)	*t*
Restrictions on Activity	37.17± 13.75	45.50 ± 11.01	-6.85*	54.40 ± 11.35	-8.53*	63.10± 9.22	-10.34*
Symptom	37.70± 18.26	49.23 ± 14.41	-6.02*	61.17 ± 13.53	-7.75*	70.93± 14.97	-9.24*
Functional Emotion	14.97± 7.56	19.70 ± 6.10	-5.49*	24.57 ± 5.82	-7.58*	28.70 ± 5.63	-8.65*
Environmental Stimulus	13.43± 6.07	17.13 ± 4.52	-6.01*	20.93 ± 4.38	-7.39*	24.07± 3.90	-8.89*
Overall Asthma QOL	103.27± 45.02	131.57 ± 35.22	-6.35*	161.07 ±34.39	-8.02*	186.80± 29.41	-9.50*

*$p < .01$

Results: Asthma Quality of Life

- Asthma Control change of participants at pre- and post enrollment at 1-, 3-, 6-month, using repeated measure method (ANOVA)

	df	F	P
Restrictions on Activity	3	36.90	< 0.01
Symptom	3	27.53	< 0.01
Functional Emotion	3	23.72	< 0.01
Environmental Stimulus	3	27.06	< 0.01
Overall Asthma QOL	3	29.65	< 0.01

Conclusion

- Asthma required long-term-and continuous care.

- An effective disease management model should be designed to include comprehensive asthma health education program to meet patient's need.

- Based on our study, the predict factors of adult Asthma Disease Management Program can be a reference for interventions for all medical members.