



Background

- Medication adherence is a known important factor for better asthma outcome, yet it is generally low in adolescent population.
- However, the study of adherence rate and its impact of psychosocial factors in Thai adolescents has not been done.

Objective

- To evaluate medication adherence and explore its association with patients' disease education, perception, expectations and psychosocial factors.

Methods

- Asthmatic adolescents, 8-18 years old
- Actively treated with daily Inhaled corticosteroid (ICS)
- At Pediatric Allergy Clinic between April 2019-January 2020.

- Interviewed by physician
- Adherence : report inhaler use time per week / actual prescription
- Asthma education, perception and outcome expectation

- Questionnaires for psychological evaluation
- Children's depression inventory (CDI)
- Screen for Child Anxiety Related Emotional Disorders (SCARED)
- Rosenberg self-esteem scale in Thai youth

Results

Table 1. Patients' characteristics

Characteristic	Number of subjects (%)
Age (y), mean±SD	11.6±2.9
male	94 (70.1)
Asthma status	
Severity of asthma (GINA 2018)	
mild	53 (39.3)
moderate	70 (51.9)
severe	11 (8.1)
ACT score (for age ≥12 years old)	23.6 ± 2
C-ACT score (for age less than 12 years old)	24.1 ± 2.8
ICS use	
Technique	
complete	102 (76.1)
incomplete	32 (23.9)
Adherence rate, mean±SD	75.9 ± 27.5

Figure 1. Patients' knowledge of disease and treatment

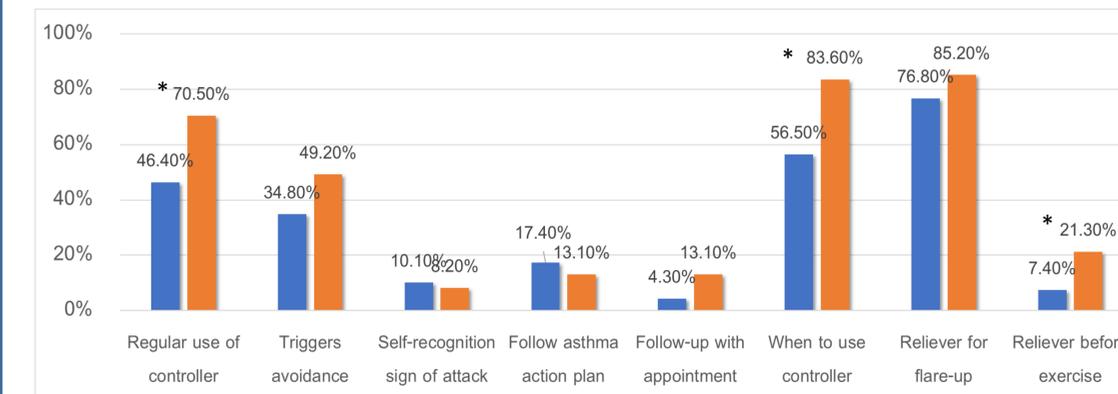
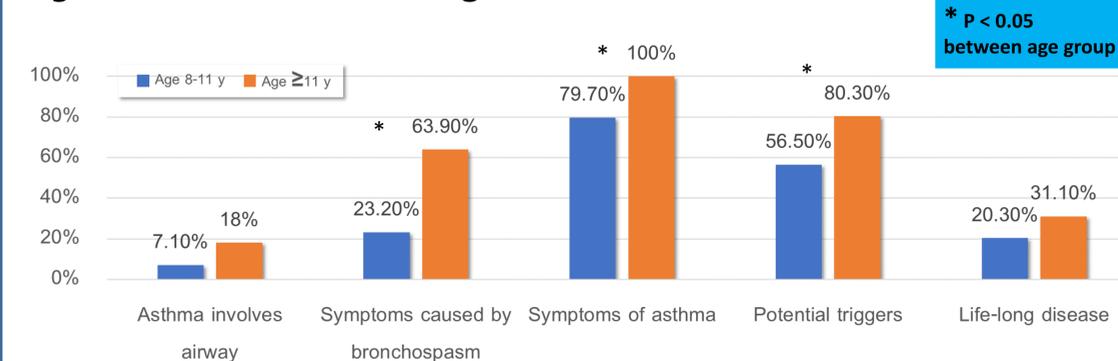


Figure 2. Patient-reported reasons behind suboptimal adherence (n=91)

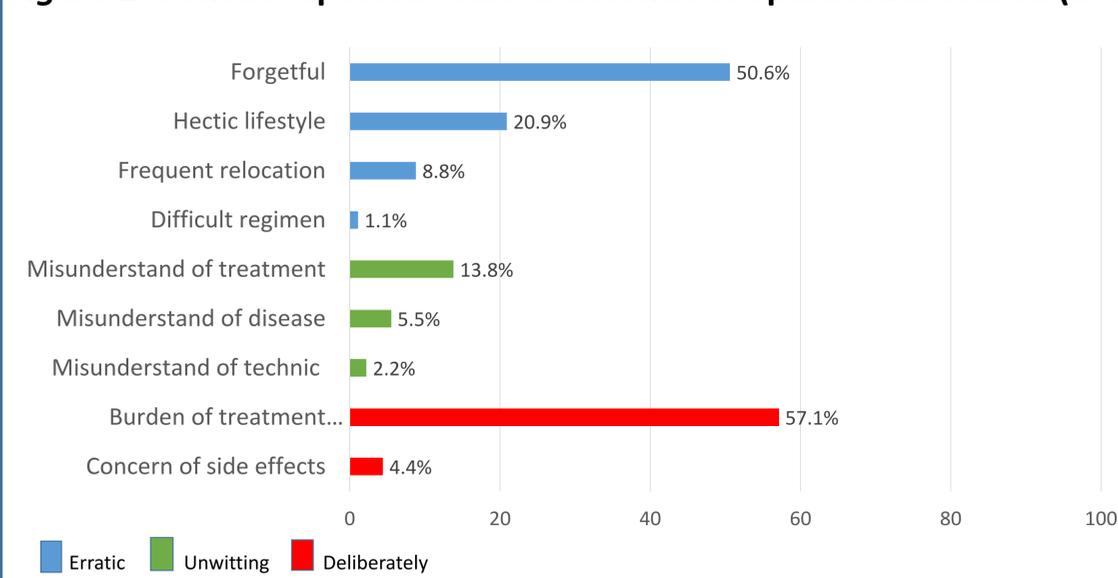


Figure 3. Asthma outcome expectation scale

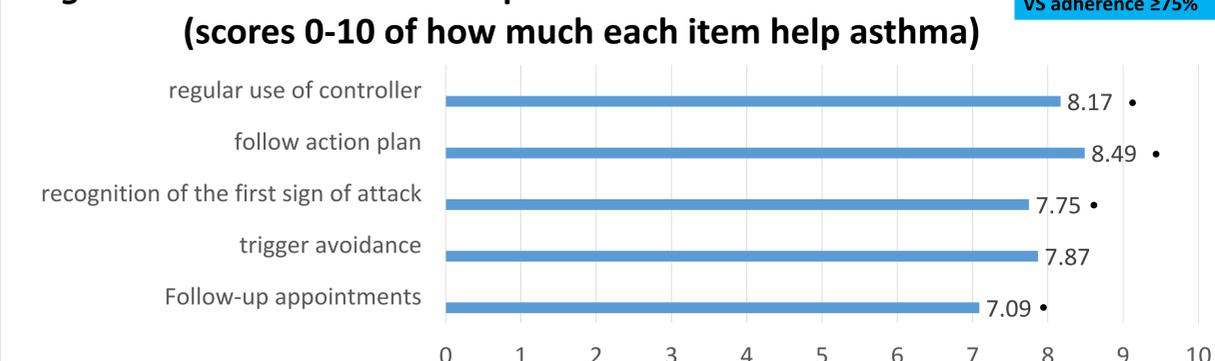


Table 2. Factors associated with higher medication adherence

Factors	Adherence ≥ 75% mean±SD	Adherence < 75% mean±SD	P-value	OR (95%CI)
Total outcome expectation score (0-50)	40.9 ± 8.4	37.1 ± 8.4	0.013	1.1 (1.01-1.12)
Asthma control test score	24.4 ± 1.8	23.2 ± 3	0.028	1.24 (1.02-1.5)
Psychological conditions	N (%)	N (%)	P-value	OR (95%CI)
Significant depression	13 (52)	12 (48)	0.457	-
Clinical range of anxiety	14 (54.5)	13 (45.5)	0.669	
Low-self-esteem	6 (55.7)	1 (44.3)	0.237	

Conclusion

- In the pediatric allergy clinic, ICS adherence rate was around 75% in Thai adolescents.
- Most of them realized what the symptoms and triggers of asthma are, but very little actually knew how the disease affects their body.
- Despite knowing that the bottom line for asthma treatment is a regular use of a controller (ICS), the most common reason leading to nonadherence was that the patients could not see the benefits over the burden of using ICS regularly. Along with the outcome expectation scores showing that the patients, who had lower expectations from the treatment they were given, had poorer adherence
- Interestingly, depression, anxiety, and low self-esteem; however: are not associated with the adherence rate, have high prevalences. There were 27.5%, 23.3% and 5.7% of all subjects tested respectively.

Application

- To apply this in practice, physicians who take care of asthmatic adolescents need to emphasize not only on using the controller regularly but also the mechanism of the disease and how the medications act on their airway. This will help the patients to have proper expectations of the treatment and to understand the compulsory of regular medication.
- Additionally, physicians need to be more vigilant to look for depression and anxiety in these type of patients, as these conditions seem to be found higher than normal adolescents