



A randomized control trial of an asthma self-management program for adolescents in Taiwan: A study protocol



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ABSTRACT

Uncontrolled asthma in adolescents can be explained by developmental changes and lack of priority for self-care activities. Limited reports on asthma self-management programs for adolescents to enhance prevention behaviors in Taiwan were found. The protocol paper presents a two-armed, randomized controlled trial aiming to test the effectiveness of a newly developed self-management program for 112 adolescents with asthma in Taiwan. The primary outcome is asthma self-efficacy. Data will be collected at baseline and the week 4. The findings of this study will determine the extent to which a self-management program for adolescents with asthma in Taiwan enhances asthma management self-efficacy, self-management activities in asthma prevention and management, and achievement of well-controlled asthma.

Trial Registration No: ACTRN12613001294741.

1. Introduction

Asthma has become one of most prevalent diseases and uncontrolled asthma has been a significant cause of death. The Global Asthma Report [1] reported approximately 334 million asthma sufferers, most of whom are between 10 and 14 years of age. Although the trend for hospital admission due to asthma and its related mortality have declined in higher-income countries, asthma prevalence continues to increase in some countries, such as Thailand and Taiwan [2]. A National Survey conducted in Taiwan demonstrated an increase of 2.6% in the prevalence of asthma among adolescents in 2005 and 7.3% in 2009 [3,4]. The data for 2009 also indicated that 11.5% of asthmatic adolescents had visited the emergency department for an asthmatic attack while 16.9% of adolescents with asthma reportedly ignored the symptoms of a flare up.

An effective self-management program may improve lung function and self-efficacy, decrease missed school days, and reduce activity limitations and emergency department visits [5]. Moreover, an ideal self-management program would be individually tailored for different populations; thus, a self-management program for adolescents must use

age-appropriate strategies that appeal to adolescents [6].

Several studies have investigated asthma interventions programs for asthmatic children in Taiwan [7–9]. However, only one study was specifically designed for adolescents [10]. The results of these intervention programs for the enhancement of lung function and asthma control were inconsistent [7,10]. Also, there was a lack of theory-based intervention programs regarding behavior change [8,10]. Furthermore, an intervention that uses different strategies, communication styles, and encouragement to address individual needs for enhancing patients' self-care is necessary [11–13]. The impact of asthma on adolescents differs from those of other age group [6]. Therefore, the development of a specific asthma self-management program for adolescents is vital. There has been far less research on the effects of such programs on asthma prevention and management, including the monitoring of symptoms of asthma. Studies in Taiwan have stressed the importance of improving knowledge in order to promote health outcomes; however, knowledge alone is insufficient to change behaviors or provide better health outcomes [6,14], particularly among adolescents [15].

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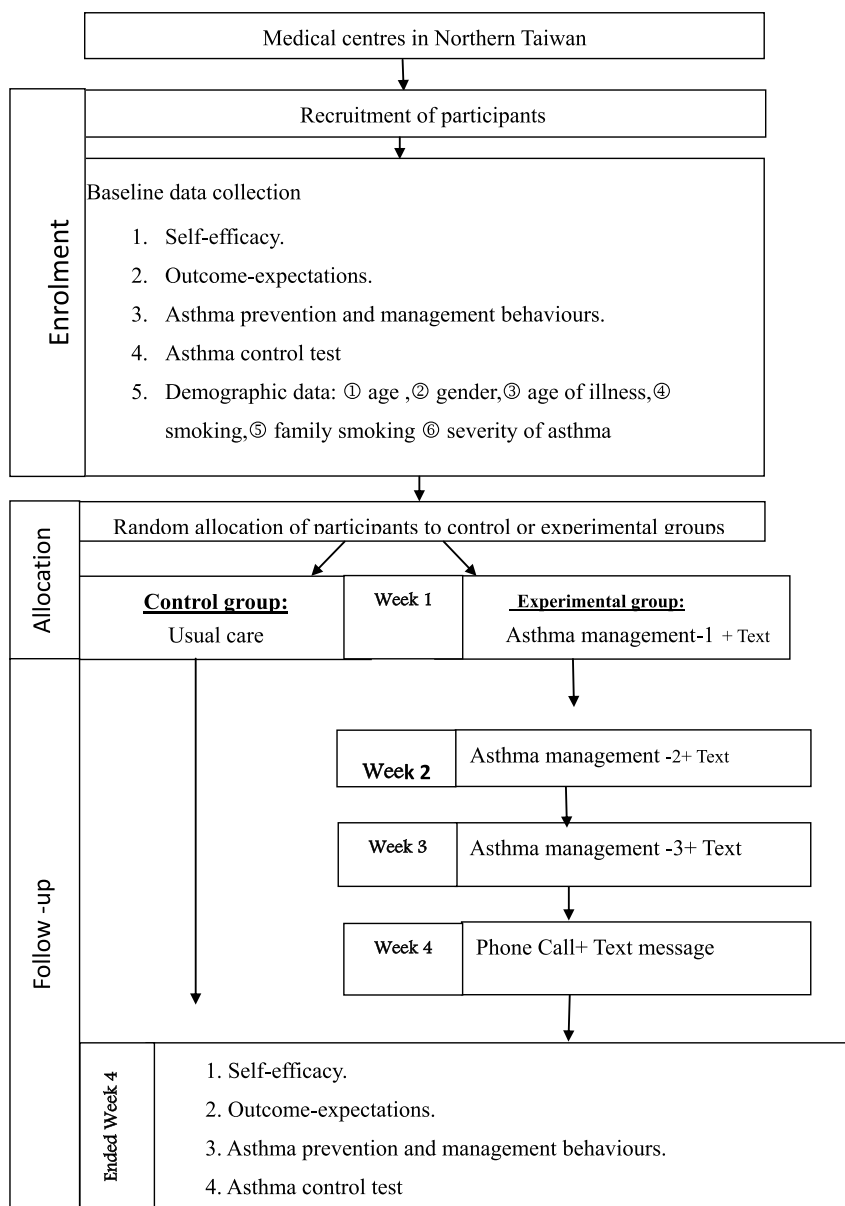


Fig. 1. Consolidated Standards of Reporting Trials (CONSORT) diagram presenting the studying enrolment both groups: intervention and control.

1.1. Study aims

The primary study aim is to develop an asthma self-management program for adolescents in Taiwan based on the self-efficacy model. The secondary aim is to assess the effectiveness of an asthma self-management program for improving asthma self-efficacy, self-management behaviors, outcome expectations, and control in adolescents.

2. Methods

2.1. Design

This two-arm, parallel-group, randomized control trial (Fig. 1) will be conducted in a pediatric clinic in the northern region of Taiwan. The control group will receive the usual asthma education by a registered nurse based on the guideline of Bureau of Health Promotion in Taiwan [8]. The usual asthma care will be provided by registered nurses at the hospital outpatient department. The participants in the experimental group will receive the newly developed asthma self-management program in addition to the usual asthma care.

2.2. Sample size

A total of 112 participants, with an anticipated attrition rate of 19.1% [16] will be recruited from the Chung Gung Medical Hospital, a 3506-bed facility that provides health services to approximately two million outpatients annually. The sample size is based on a two-tail significance level of 0.05, 80% power and at least a mean difference of 6.3 units (Standard deviation = 10.56) in the self-efficacy scores between the control and experimental groups [17].

2.3. Recruitment

The inclusion criteria are all adolescents aged 12–18years of age with asthma who attend the participating hospitals with a diagnosis of persistent moderate to severe asthma for at least 3 months as assessed by a physician, able to converse in Mandarin or Taiwanese, and with access to a mobile phone. Potential participants will be excluded if they are participating in another research or have a chronic comorbid condition.

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