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#### Original Research

### Ineffectiveness of the Tobacco Hazards Prevention Act in patients with severe and persistent mental illness



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#### ABSTRACT

Objectives: The effect of the Tobacco Hazards Prevention Act (THPA) on the reduction of tobacco use in the general population in Taiwan is understood. However, there has been little research on how these policies affect people with severe and persistent mental illness (SPMI). Hence, the influence of the THPA on daily cigarette use by patients with SPMI was investigated in a 3-year follow-up. The risk and protective factors in smoking behavior and cessation were investigated.

Study design: This is an observational study.

Methods: A total of 144 participants (78 of whom had smoked >100 cigarettes throughout their lifetime) were randomly selected from a healthcare network. Then, 100 of 144 patients with SPMI, included 50 smokers and 50 non-smokers, have agreed with 1st year follow-up. Eighty-two patients with SPMI, consisted of 44 smokers and 38 non-smokers, have agreed with 2nd year follow-up.

Results: Although women were less likely to smoke than men, those who did smoke reduced the number of cigarettes less than men over the 3-year period. Less-educated patients were more likely to smoke than those who were more educated but reduced the number of daily cigarettes more after implementation of the THPA. Maternal overprotection was a risk factor and paternal care a protective factor for smoking. Addiction, a perception of pleasure, interpersonal relationships, and self-destructive behavior increased cigarette smoking. Patients perceived that smoking alleviated their depressive symptoms.

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Conclusions: The THPA was ineffective for patients with SPMI. Some factors had different effects on the development of smoking behavior and the cessation process. Understanding the etiology of smoking can help policymakers establish more effective programs for smoking prevention and cessation.

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#### Introduction

There are approximately five million smokers in the Taiwanese population of 23 million people. To reduce the rate of smoking, the Taiwanese Government passed the Tobacco Hazards Prevention Act (THPA) on July 11, 2007 and enforcement began on January 11, 2009.1 The program included extending smoke-free areas (including all indoor work places and public places); adding graphic health warnings to cigarette packages (comprising images of lung cancer, heart disease, oral disease, and sexual dysfunction); a total ban on tobacco advertisements and promotion, as well as sponsorship by tobacco companies; and raising the health and welfare surcharge on tobacco products (tobacco tax). As a result of the implementation of these different policies, the prevalence of smoking dropped from 21.9% in 2008 to 18% in 2013 and to 16.4% in 2014. However, although the effect of these public health policies on the reduction of tobacco use in the general population is understood, there has been little research on how these policies affect people with severe and persistent mental illness (SPMI).

The previous literature has revealed a higher prevalence of smoking among those with mental disorders than among those with no mental illness.<sup>2,3</sup> In addition, the former group also experiences more withdrawal symptoms, including more irritable moods, mental dulling, and an increase in appetite, than the latter.4 In general, people with chronic mental illness have poorer physical health than the general population, with increased rates of mortality and morbidity.5 Some have proposed that it might be more difficult for patients with mental health problems to cease smoking because cigarettes have a self-medicating effect on them.<sup>6,7</sup> Smoking has a positive effect on patients with schizophrenia, including an improved ability to pay attention and to block out extraneous sights and sounds.<sup>8,9</sup> Other studies have found that, in those with depression, successful cessation of smoking is associated with a higher rate of depression recurrence. 10,111 In addition, among patients taking clozapine, abrupt cessation of smoking can increase the plasma level of clozapine, which can lead to a potentially serious risk of toxicity. 12 However, longer lifetime exposure to tobacco results in more tobacco-related medical problems, including death. 13,14 Consequently, overall, attempts to quit smoking pose additional difficulties for patients with mental health problems as compared with patients without such problems.

Traditional smoking cessation programs might not always be suitable for patients with SPMI because of the neuropsychological profile of these patients. Evidence suggests that for psychiatric patients, a flexible, open-ended combination of medication and counseling results in higher success rates.<sup>15</sup>

Moreover, Aubin et al. also considered that the provision of flexible and individualized treatment might be successful. <sup>16</sup> In Taiwan, many mental healthcare providers tried to encourage their patients to quit smoking before the THPA was brought into force. Understanding the risk and protective factors that underlie smoking behavior and increase rates of cessation among patients with mental health problems is vital in developing effective cessation programs.

Individual variations and behavior traits have a complex association with smoking dependence. Previous studies have found a few factors that might influence smoking behavior, including sociodemographics, <sup>17</sup> parental attachment, <sup>18</sup> and personality characteristics. <sup>19,20</sup> In fact, quality of life is associated with alexithymic traits, <sup>21</sup> and then, smoking might affect quality of life. <sup>22</sup> However, the possible contributing factor regarding patients with SPMI is still unknown.

The study described herein investigated the effect of the THPA on patients with SPMI. A 3-year follow-up was conducted to observe changes in the smoking behavior of these patients after the implementation of the THPA. In addition, those who had smoked at any point in their lifetime (i.e. >100 cigarettes) and current daily smokers were compared with non-smoking patients with SPMI in terms of sociodemographics, parental attachment, personality characteristics, alexithymic traits, and quality of life to help provide an overall understanding of the risk and protective factors of smoking behavior and cessation.

#### **Methods**

#### THPA

To reduce the tobacco burden, the government of Taiwan began to implement the THPA in 1997. In January 2009, an amendment to the Act took effect and strengthened a range of tobacco control programs, <sup>23</sup> recommended by the World Health Organization Framework Convention on Tobacco Control. <sup>24</sup> In addition, the amended Act raised the surcharge on a pack of cigarettes from NT\$10 (US\$0.33) to NT\$20 (US\$0.66), with a proportion of the tax proceeds dedicated to funding the new tobacco control programs. <sup>1</sup> Moreover, all media avenues, television, radio, newspapers, magazines, the Internet, and billboards, were used to promote this program.

#### Participants

One hundred patients with SPMI were selected consecutively from a psychiatric network system in Southern Taiwan. This

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