



ORIGINAL ARTICLE

# Severity of alprazolam dependence and associated features among long-term alprazolam users from psychiatric outpatient clinics in Taiwan



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**KEYWORDS**

alprazolam;  
benzodiazepines;  
correlates;  
drug dependence;  
psychiatric  
outpatients

*Background/Purpose:* The aim of this study was to examine the correlations between the severity of alprazolam dependence and socio-demographic characteristics, the characteristics of alprazolam use, psychiatric comorbidity, and beliefs toward alprazolam use among long-term alprazolam users in Taiwan.

*Methods:* A total of 148 long-term alprazolam users participated in this study. The Chinese version of the Severity of Dependence Scale was used to assess participants' severity of alprazolam dependence in the preceding month. Their socio-demographic characteristics, family function characteristics, dosage of prescribed alprazolam, duration of alprazolam use, alcohol use pattern, pain reliever and cigarette use pattern, severity of depressive symptoms, psychiatric diagnosis, and belief toward alprazolam use were investigated.

*Results:* The results of multiple regression analysis indicated that a longer duration of alprazolam use, severe depressive symptoms, a high level of belief in the necessity of alprazolam treatment, and a high level of concern about the potential adverse consequences of alprazolam use were significantly associated with more severe alprazolam dependence.

*Conclusion:* Doctors should closely monitor the severity of alprazolam dependence among long-term users, especially patients' levels of depression, beliefs in the necessity of alprazolam treatment, and their concerns over the adverse consequences of continued treatment with alprazolam.

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## Introduction

Alprazolam, a benzodiazepine (BZD) with a short elimination half-life, high potency, and rapid onset of action,<sup>1</sup> is commonly used for the medical treatment of anxiety disorders such as panic disorder and generalized anxiety disorder. Although selective serotonin reuptake inhibitors are recommended as the first-line pharmaceutical agents for treating anxiety disorders,<sup>2</sup> alprazolam is still one of the most frequently prescribed drugs in many countries, including the USA,<sup>3</sup> Australia,<sup>4</sup> and Taiwan.<sup>5</sup> Alprazolam, with its short elimination half-life, causes a more severe withdrawal syndrome and has a higher physical dependence liability than BZDs with longer elimination half-lives.<sup>6</sup> In addition, the high-potency characteristics of alprazolam also increase the susceptibility of physical dependence compared with BZDs with low potency.<sup>7</sup> Alprazolam has reinforcing effects, which are demonstrated when rates of drug self-administration exceed those of vehicle self-administration.<sup>8</sup> It is not recommended to use alprazolam for long periods of time because of the increased risk of developing dependence, as with other BZDs.<sup>9</sup> The reinforcing effects of alprazolam increase the potential of psychological dependence, which is a serious issue that should be monitored among patients treated with BZD in the long term.<sup>10</sup> Alprazolam deserves particular attention because of its reinforcing capabilities, withdrawal syndrome, potential for addiction, and potential for negative consequences of use.<sup>11,12</sup>

It is well recognized that dependence on BZDs develops not only with high doses, but also with long-term therapeutic doses.<sup>6</sup> Identification of the factors characterizing BZD dependence can serve as the basis of prevention, early detection, and intervention programs for BZD dependence. Doctors must often choose among several different drugs for patients with anxiety. Thus they must know how to identify individuals who may be at risk of iatrogenic

dependence on alprazolam and other anxiolytic drugs. Early identification of these patients would not only assist in treatment planning, but could ultimately result in greater patient satisfaction and better treatment responses. Previous studies have shown that female sex,<sup>13,14</sup> old age,<sup>15</sup> being widowed or divorced,<sup>13</sup> a high educational level,<sup>13</sup> unemployment,<sup>15</sup> long duration of use,<sup>13</sup> high daily dosage of hypnotic drugs,<sup>15</sup> severe mood symptoms,<sup>15</sup> and alcohol dependence<sup>15</sup> are significantly associated with the use of BZD spectrum anxiolytic and hypnotic drugs. Patterns of alprazolam use are influenced by age, sex, and history of alcohol dependence.<sup>16</sup> It is especially pertinent to examine patients' beliefs regarding the use of alprazolam. According to social cognitive theory,<sup>17</sup> expectancies of positive or negative outcomes have a strong influence on drug-using behavior. Nonetheless, the relationships between alprazolam dependence and beliefs toward alprazolam use are largely unclear.

The aim of this study was to examine the associations between the severity of alprazolam dependence and socio-demographic characteristics, characteristics of alprazolam use, psychiatric comorbidity, and beliefs regarding alprazolam use among long-term alprazolam users in Taiwan.

## Materials and methods

### Participants

Patients aged between 20 years and 50 years from the psychiatric outpatient clinics of six general hospitals in Taiwan who had used alprazolam for at least 3 months as an anxiety treatment were consecutively invited to participate in this study. Volunteers underwent a screening interview during the period March 2012 to November 2012. The period of 3 months of use of this hypnotic drug was determined based on the fact that hypnotic drugs often lose their sedative effect after a few months of regular

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