



Full length article

Pattern and risk of developing alcohol use disorders, illegal substance use and psychiatric disorders after early onset of alcohol use: Results of the Thai National Mental Health Survey 2013



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ABSTRACT

Introduction: Although underage drinking is a global concern, little is known about the relationship between age at first drink and development of various psychiatric comorbidities.

Methods: A secondary data analysis was done among 2928 lifetime drinkers from the Thai National Mental Health Survey 2013. Age at first drink, and onset of related psychiatric outcomes were inquired. Survival analysis using Cox regression was performed to estimate the risk over time for psychiatric problems across age ranges at first drink.

Results: Two-thirds of male and one-third of female drinkers were considered underage at drinking onset. Substance use and abuse developed earlier (<5 years) than alcohol use disorders (AUDs) and other outcomes (mostly >10 years). Those who started drinking before age 15 years were more likely to develop use of cannabis (HR = 4.75; 95% CI 2.73, 8.24), club drugs (HR = 2.88; 95% CI 1.46, 5.71) and inhalants (HR = 6.46; 95% CI 1.64, 25.37), compared to those who were 20 years or older at drinking onset. Using age as an alternative time-scale, those aged <15 years at drinking onset were significantly more likely to experience AUDs, psychotic symptoms, intermittent explosive disorder and panic disorder. However, the early onset drinkers were less likely to develop depression compared to those who started at age 20 years and over.

Conclusion: Premature alcohol consumption tends to be a gateway to various serious consequences. Efforts of such drinking age policy and interventions are needed to address vulnerable young populations.

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1. Introduction

Underage drinking has been a steadily serious problem for many decades worldwide. In 2013, approximately one-fourth of US adolescents currently drank alcohol and 14% of these were defined as binge (i.e., ≥ 5 drinks on the same occasion) drinkers (Patrick and Schulenberg, 2014). A national survey in Thailand, which has the same legal drinking age as the United States, found that 25.5% of male and 14.5% of female students were past year drinkers (Assanangkornchai et al., 2009). The rates of counterparts in European countries might be even higher due to the lower legal age for drinking (Anderson et al., 2012). Although the age which is consid-

ered to be appropriate or acceptable to drink alcoholic beverages varies across nations, there is consistent agreement concerning the effect of alcohol on adolescents, both biologically and behaviorally. Exposure to alcoholic beverages before or during the early teenage years has been linked to increased heavier drinking habits (Eliassen et al., 2009; Strunin et al., 2007), development of more severe, recurrent and persisting alcohol use disorders (Hingson et al., 2006), traffic accidents (Gruber et al., 1996; Hingson et al., 2008) and involvement of alcohol related self-harms and harm to others (Hingson and Zha, 2009), all of which might persist in adulthood (McCarty et al., 2004). Pathological pathways responsible for these impacts have been well established. Adolescents who consume alcohol earlier have been observed with a reduced volume of hippocampus, prefrontal cortex as well as white matter, resulting in deleterious alterations of various cognitive abilities including memory, planning and spatial tasks (De Bellis et al., 2005, 2000).

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Alcohol use and psychiatric illnesses are commonly co-occurring disorders as well as being important predictors for each other, depending on whichever came first. A large 10-year follow-up cross-sectional study found that the odds of developing alcohol and drug use disorders were 2–5 times higher among persons with anxiety and depressive disorders (Swendsen et al., 2010). Conversely, the chance of developing depressive disorders had a dose-response relationship with alcohol use severity (Gilman and Abraham, 2001). Along with nicotine and cannabis, alcohol is also believed to be the starting drug according to the gateway drug theory in which the more harmful and addictive drugs are causally preceded by relatively milder ones. Although this gateway drug theory has been supported in some studies (Chen et al., 2002; Kirby and Barry, 2012), many have questioned the universal existence of this causal relationship and suggested the prevalence of the initial drug use in a specific time and setting to be confounder of the relationship (Degenhardt et al., 2010; Vanyukov et al., 2012). Given the fact that exposure to alcohol during adolescence introduces irreversible structural and functional changes to the brain, the chances of developing subsequent comorbidities could be plausibly increased. Studies among school-aged population revealed the associations between various psychiatric illnesses, including mood disorders and psychotic symptoms, and alcohol use even in a subdiagnostic pattern (Deas, 2006; Rohde et al., 1996; Shrier et al., 2003).

Unfortunately, studies regarding these issues have been largely concentrated in northern American and European regions, and relatively little is known about alcohol use in countries with different sociocultural and economic backgrounds. Knowledge about relationships between onset of alcohol use and co-occurring substance use is also limited to conventional so-called “gateway drugs,” resulting in an underestimation of the problem of more extensive illicit substances. Moreover, previous studies which explored relationships between alcohol use and mental health disorders have some limitation issues due to unclear chronology between age at first alcohol use and onset of the illnesses. Altogether, the results of these studies are difficult to compare, due to the different analytic approaches, study populations, as well as study time and setting. The main objective of this study is to determine the effect of age at first alcohol consumption on development of various psychiatric consequences including alcohol use disorders (AUDs), common illicit substance uses and abuses (IUDs) as well as DSM-IV alcohol related mental disorders. The secondary objectives are to describe the prevalence of underage drinking as well as the differences in prevalence and time sequence of developing each psychiatric consequence across ages of drinking onset. Our hypothesis is that younger persons exposed to alcohol are more likely to develop various related psychiatric problems.

2. Methods

2.1. Data source and study population

The study used data from Thai National Mental Health Survey 2013 (TNMHS2013) conducted in four districts of Bangkok and 16 provinces of Thailand. TNMHS2013 was aimed to estimate the current national prevalence and relevant information of mental health problems as well as mental wellbeing. The survey was carried out following the protocol of the World Mental Health Survey Initiative (“The World Mental Health Survey Initiative,” n.d.). In brief, a stratified four-stage cluster sampling strategy was used to select national representatives of aged 18 years and older, non-institutionalized who had been living in a private household for at least 3 months. Disproportional sampling technique was used to assure the equal sample sizes from five strata, which were comprised of one Bangkok

metropolitan area and all four regions of Thailand (i.e., north, northeast, central and south). Districts of Bangkok and provinces of each region (i.e., primary sampling units), enumeration areas, households and eligible members in each household served as sample frames for respective sampling stages. The detailed sampling methods for each sampling stage are described elsewhere (Kittirattanapaiboon et al., 2016). Of a total of 4727 respondents who completed the full survey, 2928 lifetime drinkers, defined by having ever consumed at least one drink (10g of alcohol) of any alcoholic beverages on one occasion, were included in the present study. The original national survey as well as the present study received ethical approval by Ethical Review Committee for Research in Human Subjects, Ministry of Public Health.

2.2. Measures

The WMH version of World Health Organization Composite International Diagnostic Interview (WHO-CIDI 3.0) (Kessler and Üstün, 2004) was the main instrument used in TNMHS2013. WHO-CIDI is a fully structured, face-to-face, DSM-IV and ICD-10 based diagnostic interview used in many mental health surveys worldwide (Kessler et al., 2009; Wang et al., 2007). Internal validity (area under the receiver operator curve) and reliability of overall psychiatric diagnosis of the instrument are generally acceptable (Haro et al., 2006; Kessler et al., 2004). In the Thai translated version, selected sections for a national survey included screening for depression, mania, panic disorder, agoraphobia, generalized anxiety disorder, intermittent explosive disorder, suicidality, alcohol use, illegal substance use, tobacco use, psychosis, gambling, post-traumatic stress disorder, service, chronic conditions and demographic data. Content validity of the questionnaire was made by agreement among a group of three psychiatrists, cognitive comprehension was tested on persons diagnosed with major psychiatric illness and a pilot study was carried out in selected areas to revise wordings of the questionnaire. Questionnaires were read and completed by trained personnel, who were mostly nurses, at the private area of the respondent's house to maintain confidentiality regarding sensitive issues.

2.3. Age at drinking onset and covariates

Age at first drink was categorized into three levels, with cut-offs differentiating early teenage years (<15 years), later teenage years (15–19 years old) and adult years (20 years old and over, the age at which drinking is legally permitted in Thailand). Sex, age at interview, region and area of residence, income, smoking status and family history of alcohol related problems were included in the analysis on the basis of their possible relationship with age at first drink. Current age was categorized into six groups (18–24 years; 25–34 years; 35–44 years; 45–54 years; 55–64 years and 65 years and over) corresponding to the original report of the national survey in order to be comparable with the main study (Kittirattanapaiboon et al., 2016). Monthly income (≤5000; 5001–15,000; 15,001–30,000 and more than 30,000 baht) was selected as it could indirectly reflect individual economic background. Smoking status was categorized into “never smoke” and “ever smoke” (currently or previously smoked). Family history of alcohol problems was derived from the item “How many of your close relatives – including your biological parents, brothers and sisters, and children – ever had problems with alcohol use?”. Respondents who reported one or more first degree relatives were classified as having a family history.

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