



## Original article

## Youth at Risk: Suicidal Thoughts and Attempts in Vietnam, China, and Taiwan

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## A B S T R A C T

**Purpose:** Despite increasing rates of suicide among youth in Asian cultures, there is a lack of suicide data among 15–24 year-olds, and little is known about the risk and protective factors for suicidality. This study examines the prevalence of suicidal ideation and attempts among 15–24 year-olds and identifies the sociodemographic correlates of suicidality in Hanoi, Shanghai, and Taipei.

**Methods:** A cross-sectional survey of 17,016 youth aged 15–24 years was conducted in rural and urban areas of Hanoi, Vietnam; Shanghai, China; and Taipei, Taiwan in 2006. Logistic regression was used to analyze correlates of suicidal ideation and attempt across cities.

**Results:** The 12-month prevalence of suicidal ideation and attempt was 8.4% and 2.5% across all three cities, respectively. Suicidal ideation was highest in Taipei (17.0%), Shanghai (8.1%), and lowest in Hanoi (2.3%); similar trends were found for suicidal attempts. Younger age cohorts (15–19 year-olds) and females were more likely to report suicidal ideation and suicidal attempts compared with 20–24 year-olds and males. In multivariate logistic regression results, across the three cities, female gender, younger age, family structure, parental support, family history of suicide, migration status, and substance use were associated with suicidal ideation. Factors associated with suicidal attempt included female gender, family history of suicide, parental support, and substance use.

**Discussion:** Suicidality is common among Asian youth, with highest levels reported in more industrialized cities.

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In the latter half of the 20th century, cities in Asia experienced unparalleled social and economic transformations. Rapid social and economic change has been associated with a loss of social stability, and with it a rise of depression and suicidality (suicidal thoughts, attempts, and completions) [1–5]. For example, Diekstra [6,7] has shown a strong association between social change and the rates of suicide. Specifically, when analyzing secular trends for suicide by country throughout 20th century Europe, Diekstra [6] found the following to be associated with increases in suicidality: urbanization, social disruption, secularization of

society, rapid economic transitions, and loss of traditional values. Because suicide is one of the top five leading causes of death among young people worldwide [8], mental health remains one of the most pressing issues among youth today.

In this article, we compare suicidal ideation and attempts across Taipei, Shanghai, and Hanoi. Existing literature suggests that suicides are increasingly common among Asian youth. For example, before 1990, China reported a suicide prevalence of less than 10 per 100,000 [3]. Only over the past 15 years have more accurate data emerged; and with that emergence what has become clear is not only the high prevalence of suicide (23 per 100,000), but its disproportionate preponderance among young, rural females [1,3]. Moreover, in China, suicide is the leading cause of death for 15–24-year-olds and is the fifth leading cause of death for the general public [4].

Compared with China, Vietnam's suicide rate is remarkably low. In 1998, the Ministry of Health estimated the national prevalence to

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be .98 per 100,000 [9]. Tran Thi Thanh et al [9] hypothesize that the low rate is due to the relative influence of Buddhism and that those who follow the Buddhist religion and culture are less likely than nonadherents to experience suicidality.

In Taiwan, prevalence rates appear to fall between those of Vietnam and China. Specifically, among youth, the Department of Health reported that in 2004, there were 6.2 suicides per 100,000 youth between the ages of 15 and 24 years [10]. Contrary to what Phillips et al [1] have hypothesized for mainland China, in Taiwan, there appears to be a strong association between psychopathology and suicide attempts [11]. Several studies have documented the risk and protective factors for depression among adolescents in the Asian context. A study of a representative sample of 10,233 adolescents in southern Taiwan identified individual, family, peer, and school factors associated with suicide. Risk factors for youth suicide included female gender, low self-esteem, weekly alcohol use, illicit drug use, depression, high family conflict, low maternal education level, poor family function, low connectedness to school, and dropping out of school [12].

Taipei, Shanghai, and Hanoi are experiencing different stages of economic and social transitions, with Taipei the most industrialized city, followed by Shanghai and Hanoi. Since 1965, Taiwan has been a major economic powerhouse in the Asian region, with an economy based on foreign investment and trade. Economic growth has continued over the past half century, where today in the urban centers of Taiwan, possession of household goods such as computers, cell phones, and cars parallels that of industrialized countries [13]. By contrast, the social and economic transformation of China is more recent. Specifically, economic reforms began with *The Four Modernizations* instituted by Deng Xiaoping in the late 1970s. Shanghai, in particular, has become the economic epicenter of China's modernization; and for each of the past 11 years, the city has sustained double digit economic growth [14]. Vietnam's economic transformation began a decade after China's, when in 1986 the Vietnamese leadership instituted economic reforms (*doi moi*) that resulted in dramatic foreign investments in industry and infrastructure development. The past decade has seen explosive economic growth at between 5% and 9% per annum. Coupled with this economic growth has been an influx of foreign influences that has challenged traditional values.

The present study presents a unique opportunity to explore the influence of social change on the rates of adolescent suicide in three cities of South Asia: Shanghai, Hanoi, and Taipei. What makes this unique is that while each of the three cities are rooted in Confucian values, each city is currently experiencing social and economic changes, with likely profound effects on young people. However, there are few studies that make comparisons of suicidality across different Asian cultures. Although we anticipate differences in the rates of suicidal thoughts and attempts among these three cities, prior research suggests that the factors that predispose to suicidality and those that protect young people are relatively universal [6]. Thus, we hypothesize few differences in the risk and protective factors identified with suicidality in each of the three cities.

The study was guided by an ecological model of risk and protective factors [15], accounting for influences on adolescent behaviors predisposing to or moderating risk at the individual, family, and school levels. Specifically, independent of geography, young people grow up nested within family, peer, school, community, and national contexts. The relative risk to which those

contexts predispose a young person or the protection they may afford is determined by a wide set of factors—some universal and some culturally specific.

With increasing suicide rates, epidemiological data on risk and protective factors among youth in Asia will be key to developing effective intervention strategies. The objectives of this study are as follows: (1) determine the 12-month prevalence of suicidal ideation and suicidal attempts among 15–24-year-olds in Hanoi, Vietnam; Shanghai, China; and Taipei, Taiwan; (2) identify sociodemographic correlates of suicidality and how these risk and protective factors vary across city and gender; (3) explore help-seeking for suicidal behaviors by city and gender.

## Methods

### *The study*

The present study was conducted in Taipei, Shanghai, and Hanoi by collaborators from the Johns Hopkins Bloomberg School of Public Health, the Population and Health Research Center in Taiwan's Bureau of Health Promotion, the Shanghai Institute for Planned Parenthood Research, and the Hanoi Institute for Family and Gender Studies. It was funded by the Bill and Melinda Gates Institute of Population and Reproductive Health at the Johns Hopkins Bloomberg School of Public Health, with additional support from the Taiwan Ministry of Health for the Taipei portion of the study. Data were collected in 2006 from 17,016 youth 15 to 24 years of age residing in both urban and rural districts proximal to the three cities.

### *The sample*

The sampling methodology has been described in detail in "Levels of Change in Adolescent Sexual Behavior in Three Asian Cities" [16]. Multistage sampling methods were used to ensure representativeness within each city. In Hanoi and Shanghai, both private residences and group living facilities were sampled. In Taipei students were interviewed in school, with a small nonstudent subsample interviewed at their private residences and group living facilities. The survey was developed by the research team, translated, back-translated, and pilot tested in each site. Interviewers received extensive training. Most of the interview was conducted face-to-face, except that computer-assisted self-interview was used for sensitive questions. All aspects of this study received approval from the Committee on Human Research at the Johns Hopkins University as well as the collaborating local organizations.

### *Measures*

**Suicidality.** The questionnaire included two questions concerning suicidality. One question assessed suicidal ideation, "During the past 12 months, have you ever thought about hurting yourself physically or killing yourself?" One question assessed suicidal attempt, "During the past 12 months, did you ever attempt suicide?"

**Demographic characteristics.** The questionnaire included a wide variety of demographic characteristics including age, gender, education level (primary or lower, junior secondary, senior secondary, college/graduate school), family structure (live with parents, alone, relatives/others, friends), marital status, employment/education status (neither in school nor employed, both in school

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