Drinking Behavior among Female High School Students in Central Thailand

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Objective: To study the drinking behavior and factors associated with drinking among female High School students in central Thailand.

Material and Method: A cross-sectional study was conducted with 6,176 female students from central Thailand, who were classified into 2 groups according to their alcohol drinking practices in the past year (yes = 612, no = 5,564). Information was collected by an anonymous self-reporting questionnaire which consisted of 2 parts: socio-demographic factors, and alcohol drinking behavior during the past year from December 2007 to February 2008. Descriptive statistics, a chi-square test and multiple logistic regression were used to analyze the data.

Results: Of all these respondents 9.91% admitted to drinking alcohol. Most of the students were 15 years old or younger (61.80%). Univariate analysis revealed that socio-demographic factors such as age, educational level, residence, grade point average (GPA), having a job for earning money, and having family members with alcohol or drug problems were significantly associated with the student alcohol drinking (p < 0.05). Multiple logistic regression analysis, after adjusting for age, showed that only four factors were associated with alcohol consumption: the educational level (OR mathayomsuksa 5 = 3.39, 95% CI = 1.55-7.41; OR mathayomsuksa 3 = 2.29, 95% CI = 1.71-3.09), residence in a private dormitory (OR = 3.32, 95% CI = 1.01-10.27) and family members with alcohol or drug problems (OR = 1.72, 95% CI = 1.43-2.08), and a GPA greater than 3 (OR = 0.71, 95% CI = 0.58-0.86) (p < 0.05). The following for drinking practices were considered as inappropriate drinking behavior (20% drank over 2 times a month, 40% drank greater than 2 standard drinks each time, nearly 47% had experienced binge drinking, and one third had experienced drunkenness).

Conclusion: The results suggested that preventive measures for alcohol abuse among female high school students should consider the educational level, residence within a private dormitory and family members with alcohol or drug problems. Continuous insistence regarding the disadvantages of alcohol to risk groups would reduce the proportion of new and current drinkers.

Keywords: Drinking behavior, Female high school students, Central Thailand

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The World Health Organization (WHO) estimates that there are about 2 billion people worldwide who consume alcoholic beverages and 76.3 million people have a diagnosable alcohol abuse problem. Alcohol consumption is related to a large number of adverse consequences such as harm to physical and mental health, the erosion of traffic safety, consumption which leads to violence, and a reduction in labor productivity.

Alcohol consumption, although still associated with low mortality in developing countries, must be now considered a significant public health problem. In developed countries it is the third largest risk factor for death. Alcohol consumption is widespread within nearly all age groups. Surveys and anecdotal data from countries around the world suggests that a culture of sporadic heavy or “binge” drinking among
young people may be spreading from developed to
developing countries. Results from a WHO report
show that a higher proportion of young people are at a
higher risk of becoming drug and alcohol dependent
when they become adults(3).

In 2007, the National Statistical Office of
Thailand found that 29.3% of Thais ≥ 15 years old
consume alcohol. The proportion of alcohol consumption
in the 25-59 age group was 34.4%, 15-24 21.9%,
and over 60 years 15.6%(3). In females, the proportion
of drinkers in the age 25-59 years was 11.2%, 15-24
years 3.9% and over 60 years 4.6%(3). It was found that
the proportion of female drinkers increased from 8.1%
in 1996 to 14.5% in 2003, but dropped to 9.1% in 2006
and 8.8% in 2007(3,4). It is noteworthy that during the
ten-year period (1996-2006), the proportion of female
drinkers has risen in all age groups, particularly those
aged 15-19 years increasing from 1.0% to 2.9%(4). The
major alcoholic risk groups are the working group and
young people. Youngsters who drink have a greater
risk of becoming alcoholics when they become adults.

In order to control alcohol use among adolescents, it is
useful to know their drinking behavior and the factors
related to their alcohol consumption in order to
organize preventive activities, such as information
and education campaigns.

The aim of this study was to study the drinking
behavior and factors associated with drinking among
female High School students in central Thailand.

Material and Method

Study population and data collection techniques

A cross-sectional study was conducted from
December 2007 to February 2008 in order to study the
drinking behavior and to determine the risk factors
which contribute to alcohol consumption among
female High School students in central Thailand. The
proposal was reviewed and approved by the Ethics
Committee for Research in Human Subjects of Mahidol
sampling technique was used for selecting students
from 10 provinces of central Thailand. These provinces
were randomly selected and represented the socio-
demographic characteristics of female adolescents in
central Thailand. The selection of schools was based
on a list of schools obtained from the Provincial
Education Offices. All together 6,176 students from
Mathayomsuksa School (MS) 1, 3 and 5 participated in
the study. In each school, 3 or less classes of each of
these 3 educational levels were recruited of the same
grade level. If there were more than three classes, three
classes with students of mixed academic performance
were randomly selected by teachers. The study subjects
were classified into 2 groups according to their alcohol
intake in the past year (yes = 612, no = 5,564). Each
subject signed a written consent form stating they were
willing to participate in the study. The anonymous self-
reporting questionnaire which consisted of 2 parts,
socio-demographics and alcohol drinking behavior
within 12 months was performed by trained health staff.
The details of the study including the right to refuse to
participate without any effect on their student status
was explained and informed consent was obtained
from all participants. Socio-demographic factors were
given as a percentage, crude odds ratio, 95% CI of OR
and p-value. Univariate analysis was performed using
Chi-square tests to differentiate proportional exposures
between the drinkers and the non-drinkers. Categorical
variables were used to determine suitable variables.
A multiple logistic regression was used to estimate
the adjusted odds ratios and the 95% CI of OR as
measures of associations, including identification and
adjustment for confounding variables. Statistical
significance was set at p-value < 0.05.

Results

Of a total of 6,176 female High School
students a total of 9.91% consumed alcohol. Most of
the girls (61.80%) were 15 years old or younger. Their
educational level ranged from 31% in MS 1 to 37% in
MS 5. The majority of study subjects had a Grade Point
Average (GPA) of 3.0 or higher (56.06%) and 2.0-3.0
(39.77%).

Using a univariate analysis, the factors
significantly associated with alcohol drinking
assessed by a Pearson Chi-square test (p < 0.05)
were age groups (OR = 1.76; 95% CI = 1.48-2.09),
educational level (OR MS 3 = 2.53, 95% CI = 1.96-3.28;
OR MS 5 = 3.01, 95% CI = 2.35-3.85), and residence (OR
school dormitory = 2.48, 95% CI = 1.04-5.69; OR private
dormitory = 7.34, 95% CI = 3.53-15.23), as well as GPA
(OR < 2.0 = 1.48, 95% CI = 1.01-2.17; OR > 3.0 = 0.66;
95% CI = 0.55-0.80), having a job for earning money
(OR = 1.28, 95% CI = 1.04-1.57) and having family
members with alcohol or drug problems (OR = 1.76,
95% CI = 1.46-2.11) (Table 1).

After adjusting for age, five factors were
included in the multivariate analysis model, educational
level, residence, GPA, job for earning money, and
family members with alcohol or drug problems. Upon
adjusting for potential confounders, only four
variables were significantly associated with drinking.
Females with a grade level of MS 5 or MS 3 were 3.39 (95% CI = 1.55-7.41) times and 2.29 times (95% CI = 1.71-3.09) respectively more at risk of drinking alcohol than females of MS 1 level. Girls residing in a private dormitory were 3.32 times more likely to drink (95% CI = 1.01-10.27) than girls who lived at home or in a school dormitory. Girls with family members with alcohol or drug problems were 1.72 times more likely to drink (95% CI = 1.43-2.08) than girls whose relatives didn’t have addiction problems. A GPA greater than 3.0 was found to be a protective factor (OR = 0.71; 95% CI = 0.58-0.86), as shown in Table 2.

The majority of girls drank alcohol less than 3 times a month (81.92%) and they each consumed less than 3 standard drinks in the past 30 days (57.63%). Approximately 20% of girls drank more often than twice a month and 40% of them drank more than 2 standard drinks each time. Alcohol consumption was more common when joining a party (49.44%) but a high proportion of girls also drank at home/dormitory (40.82%). Nearly 47% of respondents experienced binge drinking and one third admitted to being intoxicated during the 30 days prior to participating in this study, as shown in Table 3.

Discussion

The majority of girls were 15 years old or younger (61.80%). The proportion of those drinking

Table 1. Factors associated with the alcohol consumption of female High School students

<table>
<thead>
<tr>
<th>Variables</th>
<th>No. drinker/total</th>
<th>% drinker</th>
<th>Crude OR</th>
<th>95%CI</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age group (yrs) (n = 6, 176)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 15</td>
<td>302/3,817</td>
<td>7.91</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>&gt; 15</td>
<td>310/2,359</td>
<td>13.14</td>
<td>1.76</td>
<td>1.48-2.09</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Educational level (n = 6, 176)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MS 1</td>
<td>94/1,964</td>
<td>4.79</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>MS 3</td>
<td>217/1,921</td>
<td>11.29</td>
<td>2.53</td>
<td>1.96-3.28</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>MS 5</td>
<td>301/2,291</td>
<td>13.14</td>
<td>3.01</td>
<td>2.35-3.85</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Religion (n = 6,158)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buddhist</td>
<td>593/6,051</td>
<td>9.80</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Islam</td>
<td>4/44</td>
<td>9.09</td>
<td>0.92</td>
<td>0.28-2.70</td>
<td>1.000</td>
</tr>
<tr>
<td>Others</td>
<td>4/63</td>
<td>6.35</td>
<td>0.62</td>
<td>0.19-1.79</td>
<td>0.359</td>
</tr>
<tr>
<td>Residence (n = 5,559)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>House/Apartment of family</td>
<td>534/5,502</td>
<td>9.71</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>School dormitory</td>
<td>8/38</td>
<td>21.05</td>
<td>2.48</td>
<td>1.04-5.69</td>
<td>0.028</td>
</tr>
<tr>
<td>Private dormitory</td>
<td>15/19</td>
<td>78.95</td>
<td>7.34</td>
<td>3.53-15.23</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Cohabitants (n = 5,931)</td>
<td>484/5,049</td>
<td>9.59</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Parent</td>
<td>83/820</td>
<td>10.12</td>
<td>1.06</td>
<td>0.82-1.37</td>
<td>0.629</td>
</tr>
<tr>
<td>Relative</td>
<td>4/30</td>
<td>13.33</td>
<td>1.45</td>
<td>0.43-4.39</td>
<td>0.526</td>
</tr>
<tr>
<td>Alone</td>
<td>5/32</td>
<td>15.63</td>
<td>1.75</td>
<td>0.59-4.79</td>
<td>0.228</td>
</tr>
<tr>
<td>Grade point average (n = 5,371)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 2.0</td>
<td>39/224</td>
<td>17.41</td>
<td>1.48</td>
<td>1.01-2.17</td>
<td>0.035</td>
</tr>
<tr>
<td>2.0-3.0</td>
<td>266/2,136</td>
<td>12.45</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>&gt; 3.0</td>
<td>260/3,011</td>
<td>8.64</td>
<td>0.66</td>
<td>0.55-0.80</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Job for earning money (n = 6,087)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>459/4,896</td>
<td>9.38</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>139/1,191</td>
<td>11.67</td>
<td>1.28</td>
<td>1.04-1.57</td>
<td>0.017</td>
</tr>
<tr>
<td>Family members with alcohol or drug problems (n = 5,561)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>241/3,165</td>
<td>7.61</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>303/2,396</td>
<td>12.65</td>
<td>1.76</td>
<td>1.46-2.11</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

* Pearson Chi-square test, b Fisher exact test, OR = odds ratio, CI = confidence interval
MS 1 = the first year of secondary school (equivalent to grade 7), MS 3 = the third year of secondary school (equivalent to grade 9), MS 5 = the fifth year of secondary school (equivalent to grade 11)
alcohol was 9.91%. This result may be an underestimate of alcohol consumption by these girls since they probably don’t always admit to the extent of their habits. One of the reasons may be that they were afraid of punitive consequences from their parents or caregivers, despite the fact that they had been assured that personalized information would not be reported. This study confirmed that elder girls drank more than younger ones\(^{(5-10)}\). This study also confirms that higher educational levels are associated with higher levels of alcohol consumption. This finding corresponds with the results of the study by Miller et al\(^{(7)}\). Living in a private dormitory, free of both parental control and also in the absence of an adult role model, provided the youngsters with a good opportunity to drink. The results found in this study were easy to explain and had also been found by Harford et al\(^{(11)}\). Higher intellectual ability as indicated by higher GPA scores should prevent alcohol drinking and this theory was found to be in accordance with quite a number of similar investigations\(^{(5,7,12,13)}\). Only one study concluded otherwise\(^{(14)}\). Families who had a member with an alcohol or drug problem, obviously did not set a very good example for younger people as the youngsters were then at greater risk of starting drinking too. This particular finding is easy to interpret and has also been observed else-where\(^{(15,16)}\). It has also been argued that alcohol drinking is a causal factor of substance use\(^{(7)}\). This doesn’t seem be entirely true for the group of young females investigated here since only 20% of them drank over 2 times a month, 40% had more than 2 standard drinks each time they drank, and although nearly 47% admitted to binge drinking, only one third had been drunk.

In conclusion, the results suggested that preventive measures for alcohol abuse among female High School students should consider educational level, residence within a private dormitory and family members with alcohol or drug problems. In addition, parents and caregivers should also be a good example for youngsters. Continuous insistence in regards to the disadvantages of drinking especially to the risk groups, would reduce the proportion of new and current drinkers.

**Acknowledgements**

The authors would like to express their sincere thanks for the practical support of the health staff and the staff of the participating High Schools. We would also like to thank those who were not mentioned for their kindness and encouragement. This study was conducted due to a grant from the Center for Alcohol Studies (CAS), Thailand.
Table 3. Alcohol drinking within 12 months

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frequency of drinking in the past 30 days (n = 459)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-2</td>
<td>376</td>
<td>81.92</td>
</tr>
<tr>
<td>3-5</td>
<td>61</td>
<td>13.29</td>
</tr>
<tr>
<td>6-9</td>
<td>7</td>
<td>1.53</td>
</tr>
<tr>
<td>10-19</td>
<td>12</td>
<td>2.61</td>
</tr>
<tr>
<td>≥ 20</td>
<td>3</td>
<td>0.65</td>
</tr>
<tr>
<td><em><em>Quantities for one drink in the past 30 days (standard drink</em>) (n = 472)</em>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-2</td>
<td>272</td>
<td>57.63</td>
</tr>
<tr>
<td>3-4</td>
<td>94</td>
<td>19.92</td>
</tr>
<tr>
<td>5-6</td>
<td>63</td>
<td>13.35</td>
</tr>
<tr>
<td>7-8</td>
<td>15</td>
<td>3.17</td>
</tr>
<tr>
<td>≥ 9</td>
<td>28</td>
<td>5.93</td>
</tr>
<tr>
<td><strong>Place of drinking (n = 534)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Party</td>
<td>264</td>
<td>49.44</td>
</tr>
<tr>
<td>House/dormitory</td>
<td>218</td>
<td>40.82</td>
</tr>
<tr>
<td>Shop around school</td>
<td>48</td>
<td>8.99</td>
</tr>
<tr>
<td>Garden/field</td>
<td>4</td>
<td>0.75</td>
</tr>
<tr>
<td><strong>Frequency of drinking within one time ≥ 5 standard drinks within 2 weeks (n = 579)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>312</td>
<td>53.88</td>
</tr>
<tr>
<td>1-2</td>
<td>199</td>
<td>34.37</td>
</tr>
<tr>
<td>3-5</td>
<td>40</td>
<td>6.91</td>
</tr>
<tr>
<td>6-9</td>
<td>14</td>
<td>2.42</td>
</tr>
<tr>
<td>≥ 10</td>
<td>14</td>
<td>2.42</td>
</tr>
<tr>
<td><strong>Frequency of drinking until intoxicated in the past 30 days (n = 584)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>392</td>
<td>67.12</td>
</tr>
<tr>
<td>1-2</td>
<td>167</td>
<td>28.59</td>
</tr>
<tr>
<td>3-5</td>
<td>19</td>
<td>3.25</td>
</tr>
<tr>
<td>6-9</td>
<td>3</td>
<td>0.52</td>
</tr>
<tr>
<td>10-19</td>
<td>3</td>
<td>0.52</td>
</tr>
</tbody>
</table>

* 1 standard drink is equal to an 8-13 gram quantity of ethanol

References


พฤติกรรมการบริโภคเครื่องดื่มแอลกอฮอล์ของนักเรียนหญิงระดับมัธยมศึกษาในภาคกลางของประเทศไทย

วิศิษฏ์ ฉวีพจน์กำจร, ณัฐจาพร พิชัยณรงค์

วัตถุประสงค์: เพื่อศึกษาพฤติกรรมการบริโภคเครื่องดื่มแอลกอฮอล์ และปัจจัยที่สัมพันธ์กับการบริโภคเครื่องดื่มแอลกอฮอล์ในกลุ่มนักเรียนหญิงระดับมัธยมศึกษาในภาคกลางของประเทศไทย

วิสัยคุณและวิธีการ: การศึกษาภาคตัดขวางในนักเรียนหญิงระดับมัธยมศึกษาจำนวน 6,176 คน ในภาคกลางของประเทศไทย ซึ่งจำแนกเป็นกลุ่มที่บริโภคเครื่องดื่มแอลกอฮอล์จำนวน 612 ราย และกลุ่มที่ไม่บริโภคเครื่องดื่มแอลกอฮอล์จำนวน 5,564 ราย เก็บรวบรวมข้อมูลจากกลุ่มตัวอย่างโดยใช้แบบสอบถามให้ตอบเองและไม่ระบุชื่อ ระหว่างเดือนธันวาคม พ.ศ. 2550 ถึงเดือนกุมภาพันธ์ พ.ศ. 2551 ซึ่งประกอบด้วย จำนวนที่ 1 ของผู้ตอบไป จำนวนที่ 2 พฤติกรรมการบริโภคเครื่องดื่มแอลกอฮอล์ภายในปีที่ผ่านมา รวบรวม วิเคราะห์ข้อมูลด้วยสถิติเชิงพรรณนาและสถิติเชิงวิเคราะห์ได้แก่ Chi-square test และ multiple logistic regression

ผลการศึกษา: ร้อยละของการบริโภคเครื่องดื่มแอลกอฮอล์ในกลุ่มตัวอย่างเท่ากับ 9.91  dönüşมาจากอายุน้อยกว่าหรือเท่ากับ 15 ปี ร้อยละ 61.80 การวิเคราะห์ตัวแปรเชิงเดี่ยว พบปัจจัยที่มีความสัมพันธ์กับการบริโภคเครื่องดื่มแอลกอฮอล์ได้แก่ ระดับชั้นปี (OR มัธยมศึกษา 5 = 3.39, 95% CI = 1.55-7.41; OR มัธยมศึกษา 3 = 2.29, 95% CI = 1.71-3.09) ที่พักอาศัย (OR มัธยมศึกษา 3 = 1.01-10.27) และพฤติกรรมการบริโภคเครื่องดื่มแอลกอฮอล์ (OR = 1.72, 95 % CI = 1.43-2.08) และเกรดเฉลี่ยมากกว่า 3 (OR = 0.71, 95 % CI = 0.58-0.86) (p < 0.05) นอกจากนี้ ยังมีผลตัวแปรการบริโภคเครื่องดื่มแอลกอฮอล์ในกลุ่มตัวอย่าง ได้แก่ ร้อยละ 20 ดื่มมากกว่า 2 ครั้ง/เดือน ร้อยละ 40 ที่ดื่มมากกว่า 2 หน่วยแอลกอฮอล์/ครั้ง ร้อยละ 47 เคยมีประสบการณ์การดื่มอย่างหนัก และหนึ่งในสามของผู้ดื่มมีประสบการณ์ดื่มมาก่อน

สรุป: มาตรการป้องกันการบริโภคเครื่องดื่มแอลกอฮอล์ในกลุ่มนักเรียนหญิงระดับมัธยมศึกษาควรคำนึงถึงได้แก่ระดับชั้นปี สถานที่ที่พักอาศัย โดยเฉพาะหอพักเอกชน และสมาชิกในครอบครัวที่มีปัญหาด้านการดื่มเครื่องดื่มแอลกอฮอล์/ยาเสพติด การทำให้ความเข้าใจให้หนึ่งเอื้อกอง จึงการบริโภคเครื่องดื่มแอลกอฮอล์แก่กลุ่มเสี่ยง ต่อการดื่มเครื่องดื่มแอลกอฮอล์อย่างต่อเนื่อง จะช่วยลดสัดส่วนของผู้ดื่มหน้าใหม่และกลุ่มผู้ดื่มปัจจุบันลงได้ในระดับหนึ่ง