

# ภาวะสุขภาพจิตและปัจจัยที่สัมพันธ์ในนักศึกษา ทันตแพทย์ มหาวิทยาลัยสงขลานครินทร์

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## Mental Health and Associated Factors in Dental Students in Prince of Songkla University.

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### บทคัดย่อ:

**วัตถุประสงค์:** เพื่อศึกษาภาวะสุขภาพจิตและปัจจัยที่สัมพันธ์กับสุขภาพจิตของนักศึกษาทันตแพทย์ มหาวิทยาลัยสงขลานครินทร์

**วัสดุและวิธีการ:** เป็นการศึกษาวิจัยแบบตัดขวาง เก็บข้อมูลจากนักศึกษาคณะทันตแพทยศาสตร์ มหาวิทยาลัยสงขลานครินทร์ ทุกชั้นปี ทุกคน ในช่วงเดือนมกราคมถึงเดือนกุมภาพันธ์ พ.ศ. 2555 โดยใช้แบบสอบถามข้อมูลประชากรศาสตร์ แบบสำรวจพฤติกรรมกรรมการสูบบุหรี่และการดื่มสุรา และแบบวัดประเมินสุขภาพทั่วไปฉบับภาษาไทย (Thai General Health Questionnaire 12; Thai GQH-12) ใช้สถิติพีชเชอร์และสถิติวิเคราะห์การถดถอยพหุตัวแปร

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ได้รับทุนสนับสนุนการวิจัยจากโครงการวิชาชีพทันตแพทย์ในการควบคุมการบริโภคยาสูบ และคณะทันตแพทยศาสตร์ มหาวิทยาลัยสงขลานครินทร์

นำเสนอโปสเตอร์ในการประชุม International Association for Dental Research South-East Asia Division (IADR-SEA) ครั้งที่ 26 ณ ฮองกง ประเทศสาธารณรัฐประชาชนจีน ระหว่างวันที่ 3-4 พฤศจิกายน พ.ศ. 2555

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**ผลการศึกษา:** นักศึกษาทันตแพทย์ 289 คน (ร้อยละ 83.3) ตอบแบบสอบถาม มีนักศึกษาทันตแพทย์ที่สูบบุหรี่เพียง 1 ราย และใน 7 วันที่ผ่านมา มีนักศึกษาทันตแพทย์เพศชายได้รับควันบุหรี่มือสองมากกว่า 4 วันต่อสัปดาห์มากกว่านักศึกษาทันตแพทย์เพศหญิง ( $p=0.004$ ) นักศึกษาทันตแพทย์จำนวน 111 คน จากนักศึกษาทันตแพทย์ที่ตอบแบบสอบถามสุขภาพจิต 267 คน (ร้อยละ 41.6) มีคะแนน GHQ-12 มากกว่า 2 ซึ่งจัดว่าเป็นกลุ่มที่มีโอกาสมีปัญหาสุขภาพจิต จากการวิเคราะห์พหุตัวแปรพบปัจจัยที่มีความสัมพันธ์ต่อการมีปัญหาสุขภาพจิตอย่างมีนัยสำคัญทางสถิติ 2 ปัจจัย คือ ชั้นปี และการออกกำลังกาย นักศึกษาทันตแพทย์ชั้นคลินิก (ปี 4-6) มีโอกาสมีปัญหาสุขภาพจิตเป็น 3.5 เท่าของนักศึกษาทันตแพทย์ชั้นก่อนคลินิก (ปี 1-3) ค่าความเชื่อมั่นที่ร้อยละ 95 (95% confidence interval; CI) เท่ากับ 2.117-5.890 และนักศึกษาทันตแพทย์ในกลุ่มที่ไม่ออกกำลังกายมีปัญหาสุขภาพจิตมากกว่ากลุ่มที่ออกกำลังกาย 2.2 เท่า ค่าความเชื่อมั่นที่ร้อยละ 95 เท่ากับ 1.310-3.802

**สรุป:** การปฏิบัติงานชั้นคลินิกและการไม่ออกกำลังกาย เป็นปัจจัยสำคัญที่มีความสัมพันธ์กับโอกาสมีปัญหาสุขภาพจิตของนักศึกษาทันตแพทย์ มหาวิทยาลัยสงขลานครินทร์ ในขณะที่เพศ พฤติกรรมการสูบบุหรี่และดื่มสุรา และการไม่รับประทานอาหารเช้า ไม่ได้เป็นปัจจัยสำคัญ

**คำสำคัญ:** นักศึกษาทันตแพทย์, แบบคัดกรองสุขภาพจิตไทย-12 ข้อ, สุขภาพจิต

## Abstract:

**Objective:** To study the mental health and associated factors of Prince of Songkla University dental students.

**Material and Method:** The study was a cross-sectional survey study, conducted during January to February 2012. The sample included all dental students (from year 1-6) of the Faculty of Dentistry, Prince of Songkla University, Thailand. All dental students were invited to complete a questionnaire covering demographic data and smoking and drinking habits, and the Thai General Health Questionnaire 12 (Thai GHQ-12). The data were analyzed using percentage, Fisher's exact test and multiple logistic regression analysis.

**Results:** There were 289 dental students (83.3%) who completed the questionnaire. Only one student was a current smoker. More male dental students were likely to receive second-hand smoke more than 4 days a week, than the female dental students ( $p=0.004$ ). 111 out of 267 dental students (41.6%) had a Thai GHQ-12 score more than 2, which indicate chance of mental health problem. Multivariate analysis revealed two factors significantly associated with the students' mental health: dental class and exercise. The clinical dental students (4<sup>th</sup> to 6<sup>th</sup> year) and no exercise dental students were 3.5 and 2.2 times more likely to have mental health problems than the preclinical dental students (95% confidence interval; CI=2.117-5.890) and do exercise dental students (95%CI=1.310-3.802) respectively.

**Conclusion:** Clinical dental practice period and lack of exercise were two factors significantly associated with the possibility of acquiring mental health problems in dental students at Prince of Songkla University. Gender, smoking and drinking habits, not eating breakfast seemed not to have an influence on acquiring mental health problems.

**Keywords:** dental students, mental health, Thai GHQ-12

## Introduction

In recent decades, stress among dental students has appeared to be a major concern for dental educators.<sup>1,2</sup> The practice of medical and dental professions has long been associated with high levels of professional stress.<sup>3-5</sup> Several studies reported that dental students had greater levels of stress than medical students.<sup>5-8</sup> Psychological stress could have significant negative effects on the mental health status of medical and dental students.<sup>7,9,10</sup> A study in seven European dental schools using the General Health Questionnaire (GHQ-12) found a significant proportion of the dental students (36 percent) experienced a high degree of psychological distress (cut-off point >3 on GHQ-12).<sup>10</sup> Higher levels of emotional exhaustion were found unexpectedly in a large sample of first-year undergraduate dental students in Europe. A very high percentage of dental students from the University of Jordan (73 percent) reported experiencing a significant degree of mental stress (cut-off point >3 on GHQ-12).<sup>11</sup> In Thailand, mental health status has been studied more among medical than among dental students.<sup>12-14</sup> These studies reported that 13-29 percent of Thai medical students had a chance of acquiring mental health problems. A study from Chulalongkorn University showed that the quality of life of its dental students was not so good. Approximately 64.9 percent of Chulalongkorn dental students had anxiety and stress.<sup>15</sup> A study from Chiang Mai University showed that the dental students had a mean stress score of 34.5 (standard deviation; S.D.: 5.0), using the Thai version of the Health Opinion Survey (HOS).<sup>16</sup> A lot of people consume alcohol or smoke

cigarette as a way to manage stress. Health behaviors such as alcohol use has been shown to be stress-related.<sup>17</sup> An association between smoking and mental health disorders has also been reported.<sup>18,19</sup>

The aim of this study was to determine the mental health and associated factors of the undergraduate dental students at Prince of Songkla University (PSU), Thailand.

## Material and Method

A descriptive cross-sectional survey study was carried out using a self-administered questionnaire among the first- to sixth-year dental students of the Faculty of Dentistry, PSU, Thailand. Data collections were conducted during January to February 2012. The questionnaire was divided into two sections. The first section recorded demographic data, smoking and drinking habits, and factors associated with mental health. The second section was the Thai version of the General Health Questionnaire-12 items (Thai GHQ-12) measuring current mental health status. The GHQ-12 is a twelve-item questionnaire, with four possible answers to each question. The possible answers are not at all, no more than usual, rather more than usual, and much more than usual. The scores were calculated by using a binary (0-0-1-1) score. In the 0-0-1-1 scoring method, a score of 0 was given to the two low stress items, and a score of 1 was given to the two high stress items from the four possible answers. A score of more than 2 indicated possibility of acquiring a mental health problem in Thai population.<sup>20</sup> The study was approved by the Ethics Committee for Human Research at the Faculty of Dentistry, PSU.

The data were analyzed using percentages, descriptive analysis, Fisher's exact test, and multiple logistic regression analysis. Logistic regression was used to estimate the odds ratio of the personal and patient contact experience for mental health status. A p-value of <0.05 was considered statistically significant.

## Results

A total of 289 from 347 registered undergraduate dental students in the PSU completed the questionnaires, being a response rate of 83.3 percent. The general characteristics of the dental students are shown in Table 1. The percentage of the dental students who used any form of tobacco in their lifetime was 12.4 percent (32.1 percent in males and 5.2 percent in females). Only one male student, from the fourth-year, reported being a current smoker. The prevalence of current alcohol consumption, lack of breakfast, and lack of exercise were 0.3, 15.9, and 63.0 percent respectively. Second-hand smoke, also known as environmental tobacco smoke, is a complex mixture of gases and particles that coming from the burning end of a lit cigarette or directly exhaled from the lung of a smoker. Exposure to second-hand tobacco smoke is as harmful as actual smoking. The percentage of the dental students experiencing second-hand smoke seven days prior to the survey is shown in Table 2. More male dental students were likely to receive second-hand smoke more than 4 days a week, than the females ( $p=0.004$ ).

A total of 111 out of 267 dental students (41.6 percent) who completed the Thai GHQ-12 questionnaire had scores more than 2 indicating

possibility of acquiring a mental health problem. There was no statistically significant difference in the percentage of possible mental health problem cases between male and female dental students (33.3 vs 44.5 percent,  $p>0.05$ ). The number of dental students who had possibility of acquiring a mental health problem increased with years of study as shown in Table 3. Multivariate analysis revealed two factors significantly associated with the students' mental health: dental class and exercise (Table 4). The clinical dental students (fourth- to sixth-year) and lack of exercise dental students were 3.5 and 2.2 times more likely to have mental health problems than the preclinical dental students (95%CI=2.117-5.890) and do exercise dental students (95%CI=1.310-3.802) respectively. However, possible mental health problems were not associated with smoking, drinking habits or no breakfast.

**Table 1** Characteristics of the dental students (n=289)

Variables	Number (%)
Male	78 (27.0)
Use tobacco	1 (0.3)
Alcohol consumption	
Drinking	1 (0.3)
Sometimes	134 (46.4)
No	154 (53.3)
Having breakfast	
Everyday	151 (52.2)
Sometimes	92 (31.8)
No	46 (15.9)
Lack of exercise	182 (63.0)

**Table 2** Percentage of dental students experiencing second-hand smoke in the past seven days

Gender	In a house	In a public building	In open public area	Received >4 days/week
Male (n=78)	34.6	42.3	53.8	12.8*
Female (n=211)	28.9	45.5	55.0	3.3
Total (n=289)	30.4	44.6	54.7	5.9

\*Fisher's exact test p=0.004

**Table 3** Participating dental students' scores on General Health Questionnaire (Thai GHQ-12), by percentage of cases (n=267)

Year of study	Total number	Male	Female	Response rate number (%)	Thai GHQ-12 cases (score>2) scale 0-0-1-1
First	61	21	40	48 (78.69)	33.3%
Second	59	17	42	50 (84.74)	14.0%
Third	60	14	46	55 (91.67)	38.2%
Fourth	60	17	43	26 (43.33)	57.7%
Fifth	60	18	42	50 (83.33)	58.0%
Sixth	48	11	37	38 (79.17)	60.5%
All years	347	98	249	267 (76.94)	41.6%
All males				84.61%	33.3%
All females				94.79%	44.5%

**Table 4** Logistic regression analysis of factors related mental health (n=267)

Factors	Thai GHQ-12 cases (score>2)	Odds ratio	95% confidence interval lower-upper
<b>Gender</b>			
Female (reference)	44.5%	-	-
Male	33.3%	0.624	0.348-1.117
<b>Dental class</b>			
Pre-clinic: years 1-3 (reference)	28.8%	-	-
Clinic: years 4-6	58.8%	3.531	2.117-5.890

Table 4 (Continued)

Factors	Thai GHQ-12 cases (score>2)	Odds ratio	95% confidence interval lower-upper
<b>Exercise</b>			
Yes (reference)	29.5%	-	-
No	48.2%	2.232	1.310-3.802
<b>Having breakfast</b>			
Yes (reference)	42.4%	-	-
No	37.2%	0.805	0.411-1.577
<b>Drinking alcohol</b>			
No (reference)	42.4%	-	-
Yes	40.7%	0.932	0.572-1.519

## Discussion

The profession of dentistry is considered to be extremely stressful.<sup>3</sup> The results in this study showed that 41.6 percent of the undergraduate dental students at the PSU had a chance of acquiring a mental health problem. This percentage was much higher than that in previous reports in Thai medical undergraduates.<sup>12,14</sup> Mental health status has been studied more among medical than dental students in Thailand. A study from Khon Kean University showed that 13 percent of medical students had lower than normal mental health, using the Thai Mental Health Indicator (TMHI-54).<sup>13</sup> A prevalence of 25 percent was reported in Naresuan University's medical students using the Thai GHQ-28.<sup>12</sup> For the medical students at PSU, a total of 188 out of 646 medical students (29.1 percent) had a risk of mental health problems using the Thai GHQ-12.<sup>14</sup> The probable mental health problems may be higher during health profession training than after their graduation. Studies from Thai hospital nurses<sup>21</sup> and Thai

physicians<sup>22</sup> showed that the prevalence of probable abnormal mental health were 10.3 and 7.4 percent respectively. For the dental students, a mean stress score of 34.5 (S.D.: 5.0) was reported in Chiang Mai University's dental students using the Thai version of the Health Opinion Survey (HOS).<sup>16</sup> Approximately 64.9 percent of the dental students from Chulalongkorn University was reported to have anxiety and stress.<sup>15</sup>

Health profession students suffer from high levels of stress during their training. The influence of gender on psychological stress in students of the health professions varies. The present study showed no significant gender differences in psychological distress or risk of mental health problems with Thai GHQ-12 score more than 2 for students of dentistry at PSU. However, gender was reported to be significantly associated with the risk of mental health problems among PSU medical students. Female medical students had a 1.73 times higher risk of mental health problems than males.<sup>14</sup>

The results in this study confirm that dental students experience considerable stress in the clinical period of dental education; the higher the year of study, the higher tendency for poorer mental health. Fifty-nine percent of clinical dental students (fourth- to sixth-year) compared to 29 percent of preclinical dental students (first- to third-year) in our school, had scores more than 2 on the Thai GHQ-12. PSU's dental curriculum has been changed from block rotation training to comprehensive care course training since 2006. The clinical dental students had to treat one individual patient for all the different problems he/she presented. Therefore, one reason for the clinical dental students having higher stress might be that they had more patient contact and faced difficult treatment decisions.<sup>2</sup> Fourth-year dental students at PSU started their clinical dental training in the last three months of the year. The high percentages of fourth-year dental students with Thai GHQ-12 scores more than 2 might be related to the transition stress from preclinical work to clinical practice.

The most common cause of stress among preclinical dental students was reported to be academic concerns, yet among clinical dental students it was patient management and clinical performance.<sup>23</sup> A systematic review on stress among undergraduate dental students reported that major sources of stress were related to examinations, clinical requirements and dental supervisors.<sup>1</sup> Causes of stress and anxiety in Chulalongkorn dental students had been reported to be as follows: 1) have to study very hard and lack of relaxation time, 2) atmosphere created by faculty member's feedback, 3) the amount of assigned classwork

and requirement, and 4) examination and grade.<sup>15</sup> A recent survey of happiness and suffering among dental students from eight Thai dental schools showed that the three most important causes of stress were intense dental curriculum with limited leisure time, time management ability, and learning promotion atmosphere created by clinical supervisors.<sup>24</sup> In addition, negative effects on learning promotion for the clinical students were lack of dental patients to complete clinical requirement and the amount of minimum clinical requirement not related with time. The most important adjustment problem among the PSU dental students was reported to be the need for advice from staff concerning clinical experience, using the Mooney Problem Checklist, Thai version.<sup>25</sup>

Stress may have effect on health behaviors such as smoking and drinking habits. Smoking rates are much higher among people with mental health problems than among the general population.<sup>26</sup> However, smoking was low among the PSU dental students. A lot of people consume alcohol as a way to manage stress. A study from Suranaree University of Technology showed that one of the three major causes of or motivation for drinking alcohol was to release emotional tension or to relax (13.9 percent).<sup>27</sup> Playing sport is one of the effective ways to manage stress. A lack of physical activity can lead to mental health problems. Lack of playing sport has been reported to be one of the most important stress-related factors in Chiang Mai University's dental students.<sup>16</sup> The students who played sports had lower level of stress and anxiety than those who did not play.<sup>15</sup> The results in this study showed that the dental students who lack of exercise were 2 times more likely to have mental health problems than those who did exercise.



## Conclusion

**Approximately 42 percent of the PSU dental students had possibility for mental health problems. Clinical dental students have the highest possibility of acquiring mental health problems compared to preclinical dental students. Kindly supervision from staff concerning clinical experience was important. Lack of exercise dental students may at risk of acquiring mental health problems. Gender, smoking and drinking habits, and not eating breakfast seemed not to have an influence on acquiring mental health problems.**

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