

Original article

FACTORS AFFECTING LOW ACADEMIC ACHIEVEMENT OF MEDICAL STUDENTS IN THE FACULTY OF MEDICINE, CHIANG MAI UNIVERSITY

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Abstract

The objective of this study was to determine the related factors influencing low academic achievement of medical students at the Faculty of Medicine, Chiang Mai University during 2000.

Method The data was collected by interviewing parents and medical students from the first to sixth year, who had low academic achievement, i.e. who failed or had to re-take the exam. The results were analyzed by descriptive statistical methods.

Results found that 69 medical students had low academic achievement (6.6% of the total). The male to female ratio was 2:1. Three groups of factors associated with low academic achievement were identified. The first factor was related to the students themselves (79.3%). They included frequent absence from classes, male, old age students, students from the Rural Doctor Project, mental illness, lack of academic motivation in studying medicine and personality disorders. The second factor was related to the university environment (15.5%) and consisted of numerous extra-curricular activities, bad attitude towards the course, and relationships with and adjustment to teachers and friends. The last factor (5.2%) was associated with the students' family (5.2%) and consisted of attitude toward up-bringing such as overprotection and overcontrol. **Chiang Mai Med Bull 2004;43(1):15-23.**

Keywords: low academic achievement, medical student

The medical study program takes six years in the university, which is longer than other curricula. The nation has to spend a lot of money to produce each

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medical graduate. The policy and planning staff of the Faculty of Medicine, Chiang Mai University, studied the expense per student in producing medical graduates in the academic year of 2000, and found that the costs for each one from the second to sixth year amounted to 2,225,033 baht.⁽¹⁾ Moreover, there were personal expenses paid by their parents, which amounted to 4,200 baht per head per month.⁽²⁾ Therefore, grade repetition and an insufficient grade point average (GPA) meant the nation and many parents wasted much money and the targeted number of medical graduates was lower than planned. Knowing the factors that influence low academic achievements among students will assist in correcting the failure rate and planning to reduce the repetition of grades in medical students. This would act in the best interest of the nation's investment.

The researchers are aware of this important problem. This research was designed to find out the factors influencing the low academic achievement of medical students with the hope of benefiting from result of this research for any related and interested persons.

Objective

To determine the related factors influencing low academic achievement in the medical students of the Faculty of Medicine, Chiang Mai University in the academic year of 2000.

Definition and terminology

Low academic achievement means students who failed the exam or had to re-take it.

Methods

1. Population and sample

The target population of this study comprised Chiang Mai medical students and their parents. A purposive sampling was used to select all Chiang Mai medical students who had low academic achievement and studied during the academic year of 2000, and their parents.

2. Instrumentation

In this study, the instruments were structural - an interview and the Standard Progressive Matrices test.⁽³⁾

The structured interview included: sex, age, GPA, academic problems, past educational history, motivation in studying medicine, activity during the study of medicine, medical illness, family history, parent's child rearing attitude and economic problems.

3. Data collection

Data were collected by psychiatrists from April 2001 to July 2001. Each medical student was interviewed with his/her parent by one psychiatrist.

4. Data analysis

The statistical package for social science (SPSS) was used for data analysis to determine frequency, percentages, mean, standard deviation and content analysis.

Results

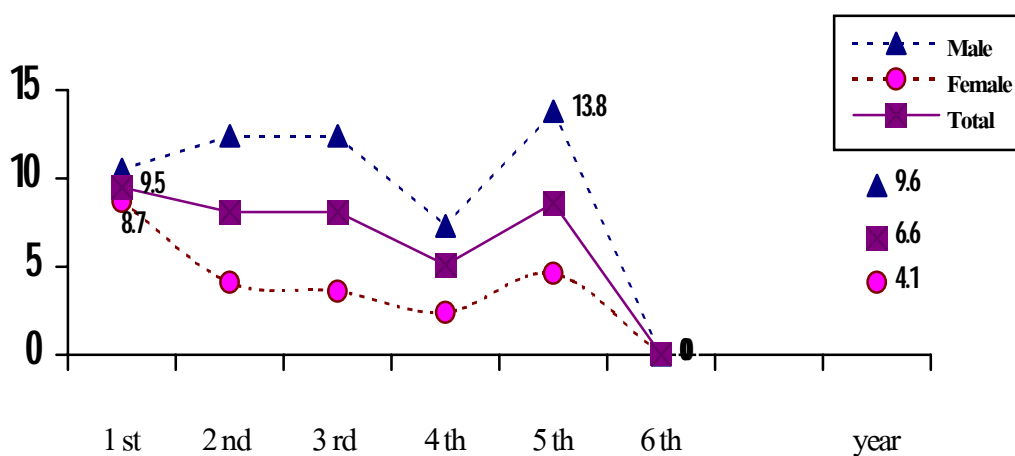
Part 1. General data of medical students with low academic achievement

The study showed that 69 students had low academic achievement out of 1,038, which constituted 6.6 percent. Of these, 47 were male (from a total of 501 males students) and 22 were female

(from a total of 537 females). The male to female ratio was 2 : 1. Graph 1 shows that more male students had low academic achievement than females in all years. However, female students were found to have a higher number of problems in the first year of medical school, and males were found to have the highest number in the fifth year. Table 1 shows that the average age of the sample group was 21.4 years (± 2.0), the youngest was 18 years and the oldest was 29 years. Of the 69 students, 65.2 percent had an average GPA between 2.00-2.49, 23.1 percent had below 2.00 and 4.3 percent had higher than 2.5. All of them had above average intelligence. Graph 2 shows that the Rural Doctor Project students had the most problem regarding low academic achievement, especially in the first year of studying medicine, and the quota students had the least problems.

2. Part 2. Factors related to low academic achievement

Each student had many factors affecting their condition, but the most common ones were their own individual factors (79.3%), followed by environmental factors in university (15.5%) and lastly familial factors (5.2%) (see Table 2 and 3). Table 2 shows the factors in each group. In their own individual factors, the most common one was absence from class (63.8%), followed by a history of academic problems (50.7%), psychiatric problems (26.1%), personality problems (24.6%), lack of motivation in studying medicine (24.6%), medical illness (14.5%), playing computer games (14.5%), young age (10.1%), careless in study (8.7%), basic knowledge problem (8.7%), older age student (7.2%), learning style problems (7.2%) clumsiness clumsy (5.8%). For environmental factors in university, the most common factor was over activities (13.0%), followed by attitude to some courses (13.0%), problem with the teaching style of the instructor



Graph 1. The percentage of low academic achievement of medical students according to sex.

Table 1. General data of medical students with low academic achievement

Variables	Frequency	Percentage
1. Male	47 (N=69)	68.1
2. Age	Min = 18 yrs, Max = 29 yrs, average = 21.4 yrs, S.D.= 2.00 yrs	
3. Grade Point Average in academic year 2000	(N=69)	
<1.00	1	1.4
1.00-1.49	8	11.6
1.50-1.99	7	10.1
2.00-2.49	45	65.2
>2.49	3	4.3
Not evaluation	5	7.2
4. Accumulated Grade Point Average in university	(N=69)	
<2.00	2	2.9
2.00-2.49	58	84.1
2.50-2.99	9	13.0
5. Accumulated Grade Point Average in high school	(N=69)	
2.50-2.99	13	18.8
3.00-3.49	20	29.0
3.50-4.00	29	42.0
Unknown	7	10.1
6. Intelligence(Standard Progressive Matrices Test)	(N=48)	
P > 95	43	89.6
P ₇₅ - P ₉₅	5	10.4

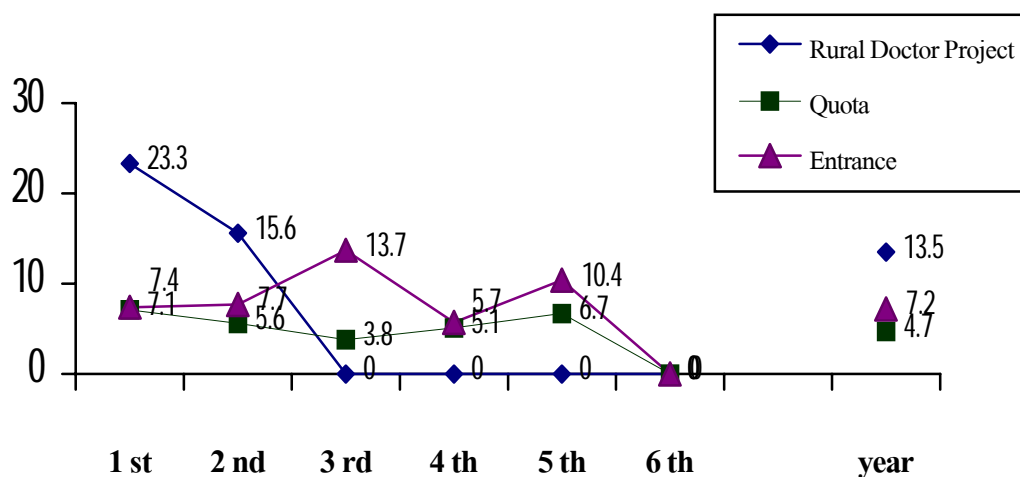
**Graph 2.** The percentage of low academic achievement of medical students according to selected method

Table 2. Factors associated with low academic achievement

	Academic year	Frequency					Total	Percent
		1 st yr	2 nd yr	3 rd yr	4 th yr	5 th yr		
	Number of subject	18	15	14	9	13	69	100
1. Student factors								
1.1	Absence from class	14	14	12	2	2	44	63.8
1.2	History of academic problem before	-	11	8	9	7	35	50.7
1.3	Psychiatric problem	1	5	5	4	3	18	26.1
1.4	Personality problem	1	2	8	4	2	17	24.6
1.5	Lack of motivation	3	5	5	3	1	17	24.6
1.6	Medical illness	1	1	1	5	2	10	14.5
1.7	Playing game computer	4	4	2	-	-	10	14.5
1.8	Young age student	-	-	5	-	2	7	10.1
1.9	Careless in studying	4	2	-	-	-	6	8.7
1.10	Basic knowledge problem	5	1	-	-	-	6	8.7
1.11	Old age student	-	-	1	2	2	5	7.2
1.12	Learning style problem	-	3	2	-	-	5	7.2
1.13	Clumsy	-	-	-	1	3	4	5.8
	Total	33	48	49	30	24	184	
2. Environmental factors in the university								
2.1	Over activities	-	1	3	2	3	9	13.0
2.2	Attitude to some course	6	-	-	1	2	9	13.0
2.3	Teaching style	7	1	-	-	-	8	11.6
2.4	Adjustment to friends and teachers	-	-	2	3	2	7	10.1
2.5	Assessment method	2	-	-	1	-	3	4.3
	Total	15	2	5	7	7	36	
3. Familial factors								
3.1	Child rearing attitude	1	1	1	2	1	6	8.7
3.2	Family problem	1	-	-	1	1	3	4.3
3.3	Economic problem	1	1	-	-	1	3	4.3
	Total	3	2	1	3	3	12	

Table 3. Frequency of associated factors with low academic achievement

Factor	Frequency	Percent
1. Student factors	184	79.3
2. Environmental factors in university	36	15.5
3. Familial factors	12	5.2
Total	232	100

(11.6%), adjustment to friends and teachers (10.1%) and assessment method (4.3%). In familial factors, the most

common factor was child rearing attitude (8.7%), followed by family problems (4.3%) and economic problems (4.3%).

Discussion

This study found that 6.6 percent of medical students had low academic achievement, which was similar to the study of Suwanthawee.⁽⁴⁾ This discussion is in 2 parts as follows:

Part 1. General data of medical students with low academic achievement

This study showed that more male students had low academic achievement than females in every year, which was similar to the study of Lakakul.⁽⁵⁾ However, females had higher number of problems in the first year of study, especially in physics. Young students had academic problems in the first and the second years of study. On the other hand, older students or those who had studied in university before usually had low academic achievement in the third through fifth year of medical school, with more problems when they were in the higher year. This was caused by social problems or difficulty adjusting to their younger classmates. They grew tired of studying and felt that they were slower learners than the younger students. However, older students did not have low academic problems in their first and second year, possibly because first and second year classes were usually basic and the students had already taken them before. Therefore, the early years were not difficult for them.

Part 2. Factors related to low academic achievement

1. Individual factors (79.3%).

Absence from class was the most common factor, especially in first through third year medical students. Classes at these levels are lectures, where instructors rarely check attendance. Many students felt that attendance was unnecessary, since they could copy their lecture

notes from classmates instead. Eventually, it was hard for these students to catch up and review when the time came for examination, and they recorded in lower scores than those who attended classes regularly. Absence from class was not a common problem in fourth and fifth year students, since classes at these levels were much smaller and not limited to only lectures. As instructors could easily detect if anyone was missing, students were more reluctant to be absent without good reason. Therefore, absence from class was only found in fourth or fifth year students, who severely lacked motivation in studying medicine, or had medical diseases or psychiatric disorders.

We found that the students from the Rural Doctor Project had the most academic difficulties, which corresponded with previous studies by Suwanthawee,⁽⁴⁾ Lakakul⁽⁵⁾ and Punjaisee.⁽⁶⁾ The Rural Doctor Project students had most problems in their first year, especially in physics. In the selection process of the Rural Doctor Project, a physics exam was not included (only Math, Biology and English were), thus, some students were able to pass the entrance examination despite their weakness in this subject. When the result of selection was announced in December selected, students might have given less importance to their classes in the final semester of high school, especially in physics, where they saw little or no importance in their future field of medicine. This made their general academic background in physics a bit weaker than students from the entrance examination

where a good physics score was critical for getting into medical school. When students of all types are combine together in one class, along with the fact that classes go at a faster pace in the university when compared to high school, those who were already weak in physics fell further behind. Some felt tired, got bored and were absent from class, and this made them fall even further behind. Consequently, these students produced in low test scores and eventually failed the course.

Psychiatric disorders were found in 18 students who had low academic achievement. This amounted to about 1 out of 4 students in the study group, or 17:1000 when compared to the entire medical student population at Chiang Mai University. This number was found to be greater than that in the previous study by Katman.⁽⁷⁾ Psychiatric disorders were mostly found in second and third year medical students. There were also more males than females, which corresponded with the study by Katman.⁽⁷⁾

This study found that students who were not interested in medical school, but forced or influenced by their parents, did not usually have difficulties in their first year. More academic difficulties were found in their second year and they kept increasing until their fourth or fifth years, when the students would need to put their knowledge into clinical practice. These conditions made it unbearable for students who did not truly want to come to medical school. These students went absent from class more and did not pay attention or provide care for their

patients, thus causing them to fail and repeat several times before eventually retiring from medical school.

The personality disorders that caused the most problems for medical students were immaturity and schizoid personality. This study found that students in social isolation had the biggest problem in the ward of Internal Medicine, since this ward required students to ask the patients about their illness (History taking). Student who did not like communicating or interacting with other people had the most problems, which caused them to fail in this ward in their third and fourth years at medical school. Students who were immature had problems with decision making and were unable to be responsible for their own learning. This type of student was mostly found in the third year and were usually those who had entered university early or were younger than their classmates. This fact also corresponded with the previous study by Lakakul.⁽⁵⁾

2. Environmental factors in the university (15.5%). One actor that contributed to poor academic

Achievement was excessive extra curricular activities that left the student no time for their studies. This problem was found mostly in third through fifth year medical students, at a time when the students took on responsibility for faculties' activities. Personal attitude towards certain courses were commonly found in the first year students. Regarding physics, the students saw little or no importance in the subject and they were therefore not interested. The same

attitude could also be found in fourth and fifth year students in courses with small credits.

3. Familial factors (5.2%). This study found that a related factor was a problematic attitude towards family upbringing. For example, over-control parents, especially concerning education, made the students bored and some even protested on learning issues. Some students were far away from their family and too much freedom caused them to lose control of their own life. Over-protective parents or parents who spoiled the created students a lack of self-discipline and responsibility.

Recommendations

1. A database of medical students must be developed to find the students at risk.

2. The Faculty of Medicine should give those schools responsible information on the importance of physics, especially for students who come from a special project (e.g. Rural Doctor Project).

3. We should emphasize the importance of motivation or desire to be a doctor to the public. A student would rather choose a career by choice than do a job on the wish of others.

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ปัจจัยที่เกี่ยวข้องกับผลการเรียนต่ำในนักศึกษาแพทย์ คณะแพทยศาสตร์ มหาวิทยาลัยเชียงใหม่

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คณะแพทยศาสตร์ มหาวิทยาลัยเชียงใหม่

วัตถุประสงค์ เพื่อศึกษาปัจจัยที่เกี่ยวข้องกับผลการเรียนต่ำในนักศึกษาแพทย์ มหาวิทยาลัยเชียงใหม่
วิธีการศึกษา สัมภาษณ์ผู้ปกครองและนักศึกษาแพทย์ที่มีผลการเรียนต่ำ วิเคราะห์ข้อมูลโดยใช้
สถิติเชิงพรรณนา

ผลการศึกษา พบว่านักศึกษาแพทย์ที่มีผลการเรียนต่ำจำนวน 69 คน คิดเป็นร้อยละ 6.6 ของ
นักศึกษาทั้งหมด ปัจจัยที่เกี่ยวข้องกับผลการเรียนต่ำดังนี้ 1.ปัจจัยจากตัวนักศึกษาเอง (ร้อยละ79.3)
ได้แก่การขาดเรียนบ่อย อายุมาก พื้นฐานการศึกษาโรคทางจิตเวช การขาดแรงจูงใจ และบุคลิก
ภาพบกพร่อง 2.ปัจจัยจากสภาพแวดล้อมในมหาวิทยาลัย (ร้อยละ15.5) ได้แก่ กิจกรรมมาก
ทัศนคติต่อกระบวนวิชา การปรับตัว 3. ปัจจัยจากครอบครัว (ร้อยละ5.2) ได้แก่ทัศนคติการเลี้ยงดู
สรุป ปัจจัยที่เกี่ยวข้องกับผลการเรียนต่ำของนักศึกษาแพทย์ได้แก่ปัจจัยจากตัวนักศึกษาเอง ปัจจัย
จากสภาพแวดล้อมในมหาวิทยาลัยและปัจจัยจากครอบครัว **เชียงใหม่เวชสาร 2547;43(1):15-23.**

คำสำคัญ: ผลการเรียนต่ำ นักศึกษาแพทย์
