CHAPTER V

SUMMARY, DISCUSSION AND RECOMMENDATIONS

SUMMARY

Almost, if not all, surveys about medical students' academic misconduct revealed a number of cheating in medical schools, although they felt it inappropriate. Like those studies, we found that the majority of our students considered academic misconduct to be wrong and would not engage in it. However, many of them admitted engaging in such behaviors. The data also indicate the strong associations between attitudes and behaviors in almost all scenarios.

Univariate analysis revealed the association between students' attitudes toward cheating and gender. Regarding the behaviors, all factors (gender, academic year, GPAX, and campus) analyzed in this study showed their relationship with students' behaviors. The logistic regression model showed that poor attitude toward academic dishonesty increased with male gender. It also suggested that academic dishonesty was less prevalent among female students, Year 4 students, and those who studied at Campus 3 and 4.

In conclusion, this study emphasizes that academic dishonesty should be a major concern for medical schools. Hence, there is a need for medical schools to establish strategies to encourage appropriate attitudes and behaviors in order to enhance the positive enculturation of students into medical profession.

DISCUSSION

Obtaining a high response rate is important for survey based study, in order to reduce the selection bias. In our study, we were satisfied with the overall 81.5% response rate from our students because we understood this was a coverage error which could not be avoided in the questionnaire survey. However, we were aware that this missing group might be the students who intentionally chose not to response to the questionnaire. The possibility that these students might have poor attitudes and behaviors which made us underestimate the real situation was kept in mind. And although there was 18.5% missing, we believed that the total number of students participated in this survey was still higher than using sample size estimation technique.

As we had expected, the response rate of Year 6 students (67.4%) was lower than the rest due to their rotating to other provinces. However, the reported attitudes and behaviors to the scenarios of this group did not seem to be different from the others. On the contrary, the response rate of Year 2 students was disappointingly low (70.2%) although they were studying together and the survey was conducted in the main campus. The missing data in GPAX were 15.2% which might be because either the students could not remember their last GPAXs or their GPAXs were low and they did not want to reveal them.

Medical school, by nature, requires the students to be honest, responsible, and high moral, more than many other professions because of the great expectation of the physicians from the society. Unfortunately, several studies revealed that many medical schools have confronted with a high level of academic dishonesty.[13,14,17,23] Like previous studies[17,18], this study demonstrates that majority of medical students considered academic misconduct to be wrong and would not engage in it. However, the fact that they still practically performed such behavior was obvious.

Self reported attitudes to the scenarios

One of the most interesting findings from this study is that many students did not consider some scenarios as academic misconduct. For example, 44.4% of the students felt that it was not wrong to distribute the test questions file they found in the computer in the classroom or 41.8% of them felt that it was alright to copy directly from textbooks or published papers without acknowledging the source. And 40.8 % were uncertain that lending friend work to copy would be wrong. Moreover, about half of the students felt that not informing the examiner when they witnessed their friend cheating was not their fault. This makes the faculty think harder about the prevention of academic misconduct because a number of the students do not consider reporting one's misconduct as their responsibility.

Large proportion of students (79%) considered copying from textbooks or published papers and lists them as references, was the right thing to do. It reflects that they may be genuinely confused about plagiarism, thus they may need to be instructed that copying the whole paragraph, although with citation, will be considered as plagiarism. The greater proportion (88.1%) felt alright to discuss about the OSCE, just completed previously by their friends, which they were going to take. This, on one hand, may reflect students' perception regarding the acceptability of swapping information and a lack of guidance about appropriate behavior. On the other hand, this concept may be correct because it should not be their fault if the teachers keep using the same examination to various groups of students. To use multiple versions of the same examination with question order scrambled is one of the guidelines for the prevention of academic dishonesty in many medical schools.

The students appeared most divided in their attitudes toward what they should do if they witnessed someone cheating. Although they felt it wrong but the loyalty to their friends seems to be more important. This was concordant with the response in item 25 that only 55.0% answered that they should report serious academic misconduct by other student to the faculty. Other studies have also indicated a similar reluctant willingness to report cheating.[17,20,27] The students may believe that it is not their responsibility to report or

fear that they will be notorious and end up doing themselves more harm than good. They are needed to be reminded that they are going to be healthcare professionals and academic dishonesty has been found linked to improper professional behavior in the future. In some cases, the reason the students did not report cheating might be because they had never been guided what and how to do it properly. Furthermore, the faculty, sometimes, neither took action on students caught in the acts of dishonesty nor took cognizance when cheating was reported.

Self reported behaviors to the scenarios

No single scenario that our students had never done or would not engage in. The two obvious scenarios they seldom perform were submitting the fake sick medical certificate and bribing the teacher. Regarding the fake sick medical certificate, the medical students might be more reluctant to perform, compared to students in other career, since they might be aware that it was an unacceptable practice in this profession. And unlike in any other profession, bribing is not commonly done in medical profession. The students seemed to be cautious about cheating for they did not resubmit the used work or submit the same work with their friends (< 10%). In stead, they would modify their friends' work before submitting it (26.3%). They seemed to perceive that it was not absolutely wrong if they did not misbehave for themselves, but did it for another, so they felt less guilty to lend their friends work to copy (55.5%) or forge their friend's name in a class attendance list (41.7%).

For the clinical year, it is quite a relief to learn that only a small number of students (8.3%) would perform a procedure in the real patient without practicing it in the manikin. That seems to show that they, at least, have insight not intending to do harm to the patients. However, more than half of them (59.0%) admitted engaging or would engage in making up the result of neurological examination without performing it. They might think it was not necessary as long as they saw nothing wrong in the patients. Nevertheless, the faculty should consider this result as important and worrisome because such behavior may be inculcated into their medical practice in the future. Letting the students continue conducting academic misconduct behavior will result in lack of medical knowledge and skill which may be dangerous to both themselves and patients. Like their responses in attitudinal aspect, only a few students (10.4%) expressed they had reported or would report academic dishonesty to the faculty.

This study confirms that unethical educational activities were viewed less seriously by medical students, as stated in other reports.[3,17,18] These results raise concern that the attitudes and behaviors practiced in the present may imprint as normal habits in future professional life. Special attention and distinguish policy from the faculty are needed in

order to solve the problems. One important point is that each misconduct behavior is not equal in term of seriousness. The medical students seemed not to engage in very serious misconduct, such as forging staff's signature or bribing the teacher. On the contrary, many scenarios that the students admitted doing were less serious and, in some ways, showed their concern and loyalty to their friends, such as lending friend work to copy, forging their friend's name in a class attendance list, or seeing friend copies answers from another student in an examination, but does not inform the examiner. Thus, the faculty may need to take different actions on these various degrees of seriousness academic misconduct.

Association between reported attitudes and behaviors

Good attitudes are believed to be very important factors for medical students to become good physicians. And there is often an assumption of the causal links between attitudes and behaviors. This study also tried to examine the relationship between reported attitudes and behaviors among medical students regarding academic misconduct. The results suggest the strong associations between attitudes and behaviors in almost all scenarios.

About 75% of medical students felt that item 12 (writing "Nervous system examination – normal" in the patient presentation but not performing the procedure) was wrong, but 59.0 % of them admitted doing it. The learning regulation and environment may impact on this result. The students in clinical years are expected to rapidly gain a considerable degree of competency and independence for patient care in limited time frame. They might have to cheat in order to fulfill academic achievement. Compared between each clinical year, there was no significant difference in their attitudes. Nevertheless, Year 6 students (49.2%) statistically performed this behavior fewer than the other 2 years (Year 4: 58.0% and Year 5: 65.2%) with p value of 0.014. This may reflect that the last year students might have gained enough experience to perform this examination properly, or they might become more concerned and honest because they realized that their cheating might do patients harm.

For item 24 (not attending the class due to food poisoning), the weak link between students' attitudes and behaviors might be due to its content. Although the students knew that it was not a wrong thing to do, they did not have to miss the class so often or whenever they got food poisoning. They would miss the class only if they felt really sick.

Factors related to reported attitudes and behaviors

As stated before, student gender is one of the most researched individual factors related to cheating. However, results were controversial, with some studies indicating that males are more likely to cheat[18,19] and others indicating no significant difference between the genders.[3,20-22,28] In our setting, female students viewed academic misconduct behavior as wrong more seriously and they also considered engaging in such activities less than male. The explanation of this may be due to societal attitude, that some level of deviance is permissible for male and perhaps even necessary for their proper psychological development.

Stress has been identified as one of the sources of academic misconduct.[28] As medical students advance in their study, they have to cope with more new stresses. The stresses are not only from extrinsic; increased course requirement to gain signatures, increased commitment of patients' healthcare, portfolio work and more clinical skills needed to be practiced, but also intrinsic pressure; feeling of incompetence, personal health or a potential of loss if they fail the course. However, there was no significant difference in attitudinal responses between the years regarding academic misconduct in our study. In contrast to the study of Rennie and Rudland[23], more Year 1 students, which were supposed to face with fewer stresses, reported that they had indulged or would indulge in academic dishonesty behavior, compared to the other years. But there is no trend of higher integrity across the years. Since Year 1 students started their study in our medical school for only a few months when we conducted the survey, their responses were more likely to reflect the behaviors in their high schools. Baldwin has reported that 82% of students who cheated in medical school admitted prior cheating.[3] This suggests that the reduction in academic misconduct in medical school may need to be started at the process of admission.

Saipanish[29] found that test/examination was the main source of stress in Thai medical students and the prevalence of stress is highest among third-year medical students. The competition among the students in the classes and the attempt to gain higher GPAX may be important factors related to academic dishonesty. From previous

studies, Hrabak et al[14] found no difference in behavior between students with higher and lower grade point average (GPA) in contrast to the study of McCabe et al.[19] This study confirmed the finding of McCabe's, that GPAXs influenced students' behaviors concerning academic misconduct. But in their study, the students with lower GPAs reported more cheating than those with higher GPAs while the result in our study was opposite. Surprisingly, the highest GPAX students reported the most frequency of cheating among medical students. This can be interpreted into two ways; firstly, the educational environment was so stressful and competitive until the intelligent students had to cheat to maintain their superiority. Secondly, the students in this group were the majority of the surveyed population (53.6%) so that the statistical significance of the analysis might be due to poor distribution of students' GPAXs. However, when we controlled the effect of other variables in logistic regression, the effect of GPAX was decreased dramatically down to the point of not statistically significant. The relationship between GPAX and misconduct behavior is therefore the result of confounding rather than a real effect.

No significant campus differences were found for students' attitudes (*p* value = 0.180) regarding misconduct scenarios. The students in Campus 3 seemed more likely to view cheating as acceptable behavior but they performed it less than their peers in other campuses. While the students in Campuses 1 and 2, who showed better attitudes, unexpectedly indulged more in academic dishonesty. However, this result has to be interpreted with cautions for we only separate students' campuses in clinical years, as described in Chapter III. Thus, the number of students in each minor campus was rather small. On the other hand, the significant difference, albeit small number, may emphasize that the association between campus and students' behaviors was obvious. In case these results were reliable, it reflects that the students' perception about academic dishonesty did not always concordant with their behaviors. Therefore, to deal with this problem, the faculty, not only has to imprint good attitudes into the students, but also has to get the policy to control their inappropriate behavior altogether.

After multivariate analysis, we found that the only factor associated with students' attitudes regarding cheating was gender. Without the influence of gender on GPAX, there was no significant link between GPAX and students' attitudes. When we rechecked the

association between students' gender and GPAX, we really found the association between them. Female students got significantly higher GPAXs than male in our setting (*p* value < 0.001). It was different for behavioral aspect for the significant associations between students' behaviors and all factors, but GPAX, were not altered after multivariate analysis.

RECOMMENDATIONS

As previously mentioned in Chapter I, important limitation of this study included that it results relied on self-reported attitudes and behaviors. Students might not respond truthfully, either because they could not remember or because they wished to present themselves in a socially acceptable manner. Some students who refused to answer all or some questions would make it difficult to obtain a full list of the population. There is no way we can be certain that what students answered accords with what they actually felt or did. Besides, this is a cross-sectional study so we cannot establish any cause and effect relationship from the survey data. Confounding factors might not be equally distributed which could lead to bias and subsequent misinterpretation. Well-constructed questionnaire and obtaining the highest response rate will be necessary to reduce the possibility of selection bias.

We expect that after reduction of some items relied on reliability test and some minor rewrite of the language, the revised questionnaire can be assumed as a well-constructed one. When the questionnaire is more meaningful, simple, short and concise, the response rate may be improved. Another way to increase the response rate, we suggest that the respondents needed to be clearly instructed. In case the researcher cannot give the information by him/herself, do provide a well-written cover letter. The respondent's impression also comes from the cover letter so its importance should not be underestimated. It provides the best chance to persuade the respondent to complete the questionnaire.

Despite these limitations, this study clearly shows the magnitude of academic dishonesty among medical students in our institution. According to the data, the prevalence of academic misconduct was quite alarming. As the matter of fact, academic misconduct cannot be completely eradicated, but it should be reduced to as less as possible. An emphasis on prevention, rather than penalties after the event, is more likely to reduce dishonest behavior in the faculty. We, here recommend some strategies, drawn from the results of our study, to enhance a better attitude and minimize academic misconduct:

1. Instill a positive attitude toward learning and also acknowledge the disadvantages of cheating to promote academic integrity
2. Provide a better learning environment (for example; more trustful, less stressful, less competitive, etc) and reduce opportunities to engage in academic dishonesty
3. Clarify and/or add policies regarding academic misconduct and penalties for those who conduct, especially the serious or common problems learnt from this study
4. Continuously imprint students' ethical and moral responsibilities to avoid cheating and help prevent others from cheating
5. Test should be original, avoid repetitions. Keep it in a locked safe place
6. Plagiarism should be taught and always emphasized
7. Male students may have to be focused more than female
8. Encourage students to report cheating

Focus group and in depth interview may help getting more detailed information about academic misconduct. Moreover, further study as a longitudinal survey may be useful for detecting more meaningful information. It will provide better information about the continuity or discontinuity of students' attitudes and behaviors over time and allows for the individual tracking of patterns of behavior, as well as trends of development, within a group. We may be able to find out about cause-effect between various factors and the students' attitudes and behaviors regarding academic misconduct. As a result, we may develop more appropriate environment, curriculum, even regulation, aimed to minimize academic misconduct.