



CHAPTER V

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Discussion

A cross-sectional study was carried out in 351 first year Medical students to find out the prevalence of depression and its relationship with related factors in University of Pharmacy and Medicine at HoChiMinh city, Vietnam, in February, 2008.

The first year students were the subject that has some special characteristics related to their mental health status specifically stress and depression consequently. Most of them were in the age of 19, some of them were more than 21 years old because they took entrance exam for more than two times. For the freshman university, they had to face to the transition from a personal to an impersonal academic environment, very structure of academic experience at college level and Medical major in particular was high pressure and requirement. According to Education and training management Department of University of Medicine and Pharmacy at HoChiMinh city, in the first term of the first Medical academic year, the students had to attend class 48 hours per week and finish their homework, assignments and final exam at the same time without break time after finish subject. Additional, a huge and broad information and knowledge in very specific major of Medical increase pressure of overload working for students, presenting in high prevalence of stress in increased class workload (88%) and lower grade than anticipated (82.3%). This result was consistency with a study conducted by Shield

(Shields, 2001). In addition 76.1% of students changed their sleeping habit which might be a result from not only too many class works but also from lack of time management skills and learning strategy (Misra et al., 2000). It is evident that necessary information and skills were not available for freshmen students in this university. Moreover, most of them (77.8%) lived far from home for the first time, they majority had lived in rented room or rented house and dormitory with their friends. However, among 118 students lived in dormitory, there were 20 students (17.0%) responded that they lived alone. Spending more than 4 months (since September to February) but still could not make any friends, thus they felt lonely. This characteristic was reflected in high percentage of stress in "troubles in finding new friends" (36.8%).

Prevalence of depression among the first year Medical students was quite high by 39.6%. This finding was higher than the result in the study done by Ratana in Thai adolescents aging between 18 to 21 with 33.1% (Somrongthong, 2004) and also higher than depressive prevalence in freshman college in Hong Kong and Beijing (Yuqing et al., 2008). With very strict and tough requirement of Medical academic environment, in addition to the fact that data collection of this study was at the end of the first term, the students were spending time for many exams so they might respond with high percentage of poor feeling.

In bivariate analysis, regarding gender, female students seem to be higher in prevalence of depressive symptom insignificant than male. This finding was similar with study in Beijing (Yuqing et al., 2008) and also found in metropolitan China study (S. Lee et al., 2007). However, it is contrasted with study did in adult women whose

had higher significantly depressive prevalence than male in Korean (Cho et al., 1998). Being a first year student, female and male faced to similar changes in the transition stage of life and they also learnt in the same conditions in this university life (similar in distribution of general characteristics). Moreover, recently years the social-economic in Vietnam and particular in HoChiMinh city have changed and developing so fast as well as additional changes in gender role in society might be explained for non-difference in gender and depressive symptom.

There were significant associations between depression and general characteristics in bivariate analysis. Those students who were an ethnic students had higher prevalence of depressive symptoms than the Vietnamese students with p-value = 0.01 was shown by 57% of ethnic students felt their finance was not enough. They might be faced many difficulties in medical learning and adaptation many changes in culture of the city life as well. In agreement, a study done in California found out that depression was twice as high as among Latinos ethnic comparing with non-Latino (10.5% versus 5.5%, $p < 0.001$). Low acculturation was associated with an increased risk of depressive symptoms (OR=1.54, $p = 0.007$). Additionally, perception of financial status related to depression that revealed sufficient and comfortable feeling had likely less depressive symptoms than not enough perception by p-value = 0.044. This was nearly similar meaning indirectly of higher risk factor for depressive symptoms among the low income Latino ethnicity in study carried out at California (Mikolajczyk et al., 2007). There were differences between depression and type of accommodation where dormitory seemed to got higher percentage of depressive symptoms.

Satisfaction of relationship revealed the quality of relationship with parents and friends which were considered as very important support systems for students. There were highly significant difference between those potential personal consequences and depression, presenting with $p\text{-value} < 0.01$ for more satisfaction with friends less depressive symptom and $p\text{-value} = 0.05$ also for higher in dissatisfaction of relationship with parents higher prevalence of depressive symptomatology. There was consistency with finding of peer and parents relationship were associated with depressive symptom in Chinese American college students (Ying et al., 2007). Furthermore, among the students who had no close friends and lower, the percentage of depressive symptom in group "not satisfy with friends" (80%) was likely more higher significant than "satisfy" group (37.2%) with $p\text{-value} = 0.031$. In agreement, poor interpersonal skills can create difficulties for adolescents in changing relationship with peers (Burns et al., 2002).

Furthermore, exercise activity represented for personal self-care also belong to potential personal consequence in which less exercise practice was likely get high percentage of depressive symptom with $p\text{-value} = 0.006$. A study in Black women at United State also found that exercise activity associated with a reduced odds of depressive symptoms (Wise et al., 2006). The other study in high school senior differentiated in the depressed and non depressed group, showing depressed group was found to engage in less physical activity (Field et al., 2001). Regular physical exercise has been shown to decrease the level of stress hormones the body releases in response to stress. Experts recommend performing about 20 minutes of aerobic exercise three times a week. Stretching is a form of exercise that relieves muscle

tension. A brisk walk is a healthy way to clear the mind and relieve tension (Paul Ballas, 2006).

In view of using leisure time effectively, going out with friend or listening to music/read book/TV/game or playing sport had positive meaning. Those students who chose more than 2 positive choices get less depressive symptom than the students had one leisure choice. This different was significant with P-value = 0.040 (shown in Appendix A)

University students, especially freshmen, were risk subjects of stress due to the transitional nature of university life (Aktekin et al., 2001; Dahlin et al., 2005; Morrison et al., 2001). In terms of stress, intrapersonal sources of stress resulted from internal factors and academic factors that caused by university-related activities and issues were the most common source of stress. There were 2 factors of intrapersonal, 2 factors of academic sources and 1 factor from environment sources that listed in the top five sources of stress, including new responsibilities (88.6%), increased class workload (88%), lower grade than anticipated (82.3%), change in sleeping habits (76.1%), and change in living environment (72.4%). Furthermore, interpersonal stress factors raised from interaction with other people, such as friends, parents, etc was responded with highest percentage of stress caused by working with unacquainted people (62.7%). Those finding consisted with stressors among Iranian nursing students (Seyedfatemi et al., 2007) and in Midwestern University, intrapersonal sources were the most common source of stress (Ross et al., 1999).

Stressful life events was powerful predictor of depression in longitudinal study (David et al., 2006). The association between depression and stress was analyzed in Spearman Correlation for non parametric statistics test. Obviously, stress and depression had a positive linear correlation highly significant with correlation coefficient $r = 0.272$ and $p\text{-value} < 0.001$. This measurement approved a little positive linear correlation between stress and depression. The students experienced more stress they get more risk of depression. Specifically, in relationship between each stress factor and depression, the finding showed significant differences between depression and intrapersonal stress sources (decline in personal health with $p\text{-value} = 0.001$), academic sources (increased class workload with $p\text{-value} = 0.026$), environment sources (put on hold for extended period of time with $p\text{-value} = 0.001$), and interpersonal sources (working with un-acquainted people with $p\text{-value} = 0.022$).

Depression obviously was caused by a large number of factors that can be approved in multivariate analysis. In binary logistic regression equation, multivariable including ethnicity, type of accommodation, perception of financial status, whom the student lived with, satisfaction with friend and parents, exercise practice, working with un-acquainted people, roommate conflict, fight with friend, minor law violation, decline in personal health, increased class work load, messy living conditions, and put on hold for extended period of time that differentiated in relationship with depression in bivariate analysis was retested simultaneously predicting multiple depression outcome.

Regarding inter-relationship among 16 independent variables, living in dormitory, living with family, and ethnicity had relationship which shown highly

significant in chi-square test for bivariate analysis (p -value < 0.001). Obviously, in addition to the fact that these were very closely relationships that most of ethnic students lived in dormitory and those lived in dormitory often lived with their friends. Among three variables, when took out of logistic model, chi-square for change of living with family was smallest comparing with 2 other variables.

After controlling all 16 variables and checking inter-relationship, the finding sorted out 8 confounding factors and revealed the multifaceted nature of risk factors and their relative contribution to outcome variable. In term of positive effect, students who did not satisfy with relationship with parents and friends, decline in personal health, fight with friends, waiting something for long time, the risk of depression increased significantly. In contrast, regarding negative effect, living with family, practice exercise and working with un-acquainted contributed to reduce the risk of depression.

The result in the final logistic model revealed that the support system from parents and friends was very important. Good relationship reduced depression and versus poor relationship leaded to more troubles, stress and depressive symptoms.

However, the result in logistic model shown the contribution of potential personal consequences and stress to depressive out-come; the causation could not confidently approve in cross-sectional study design that was unable to measure exposure factors whether come first or not.

Limitation

The Student Stress Survey question explores only stressors; therefore, it could not reveal the level of each stress factor. Test for trend was not used to show the trend of stress associated with depressive continuous score which was used as binary variable and were not significant the bivariate analysis.

The CES-D as a tool for screening only was limit in depressive measurement that requires a strictly clinical diagnosis and related to many factors as family and personal history which could not determine accurately in this cross-sectional study design.

Data collection procedure carried out in the class by gathering all students together at the same time. While filling self-administrated questionnaire, student's respond can be influenced by the others.

There are some limitations to use reference data as the base line, the previous study about mental health problems are not available so the finding could not compare with the national data or some other different depression measurement.

Because of time and budget constrain, this study can only assess the first year Medical students that can not be the representation of all the first year students in this University so there was limit comparison with other academic years and in generalized for the first year.

5.2 Conclusions

Being a Medical student, it is an honor and achievement not only for oneself and their family but also an expectation for University in their education and training progress. That motivation was pay more attention on students since they start their

University life, a transition time of natural of life consisting of many changes in social life and academic environment exposure. This study explored prevalence of depression and related factors among 351 first year Medical students in HoChiMinh.

Data were collected in first year Medical student with 91% of respondent rate. The population of this study was in the age of 18 to 25 and most of students were 19 year olds with 41.9% of male and 58.1% of female. The majority of ethnicity was Vietnamese group with 85.2% and the mainly religion was Ancestor Worship. Their hometown mainly were in other provinces with 77.8% and students lived rent room or house with 35%, dormitory with 32.5% and lived with friends by 46.4%. More than half of students with 54.2% felt that their finance was not enough. The percentage of students sometime do exercise was 28.2%, often do with 21.4%, always do with 11.7%.

Potential personal consequence factor including satisfaction of their relationship, very satisfy with parents was responded by 63%, satisfy with friends was answered by 60.7%. Leisure activities that most of choices for immobility relax activities as listening to music of reading book or watching television of playing game with 74.4% were others factor in potential personal consequences; but 8.8% of students responded that they did not have free time. More than half of students chose talking to friend as a way to coping with problems; the second choice was talking to parents.

About students stress, top five of stress that students faced was prone intrapersonal factors, academic environment and environmental factors. There were new responsibilities by 88.6%, increased class workload by 88%, lower grade than

anticipated by 82.3%, change in sleeping habits with 76.1%, and change in living environment 72.4%. In addition, the highest percentage of interpersonal factors was working with un-acquainted people. Most of those stressors were daily hassles.

Prevalence of depressive symptom among first year Medical students was quite high with 39.6% by using the CES-D tool for screening depression with cut-off point = 22.

In bivariate analysis, this study found out that there were significant differences between depressive symptom group and ethnicity, type of accommodation, whom the students living with, exercise practice, perception of financial status, satisfaction of relationship with parents and friends. Stress scores and depression scores had positive linear relationship with $r = 0.272$. Many stressors as working with un-acquainted people, decline in personal health, increased class workload, and put on hold for extended period of time were differentiated significantly with depressive group.

In multivariate analysis, in logistic regression model after controlling confounder factors, satisfaction with parents and friends, and stressors as decline in personal health, fight with friend and put on hold for long time increased the risk to get depression; additionally, living with family, practice exercise and working with un-acquainted people reduced the risk of depression with $p\text{-value} < 0.05$.

5.3 Recommendations

It is suggested that for further study, qualitative study should be conducted in combination with quantitative study to explore the perception of responding with

stress, causes and level of stress in association with depression. Regarding quantitative study, longitudinal study should be carried out to determine consequences of daily hassles and life events that related to depression during students' learning time stages.

In terms of depressive prevention, freshmen students need to be orientated about learning skill, time management skill and communication skill in order to meet academic requirement, arrange their time effectively for learning and leisure activities, and overcome difficulties in working in new environment through foundation workshop at the beginning time of the first term or cooperate with The youth Union activities. Moreover, stress management information should be provided in high pressure environment like Medical University.

Maintaining and enhancing support systems from friends, peers should be promoted for students in coping with problems in learning and life skills as well through supporting from seniors. The other factor released stress and reducing depression as exercise and sports should be encourage to practice regularly combining with extra activities in University.

Reducing stress like class works, messy living condition, expectation for grades, conflicting with friends should be implemented to prevent suffering from stress and its more severe consequences. Additionally, dormitory environment where one third of students lived in should be improved in terms of friendly and neat environment.