CHAPTER IV

DATA EXERCISE

4.1 Introduction

As described in chapter two, community- orientation of medical students comprises of three elements.

♦ Knowledge and awareness of health and related problems in the community

♦ Willingness and interest to address those issues and

♦ Ability to work in and with community.

This data exercise attempts to measure the second element. The second element mainly reflects the attitude of medical students towards the community and community related health care problems. Attitude of medical students plays an important role among the causal factors of problem situation. Therefore, measuring the attitude of medical students is the main component in this data exercise.

Attitude is a psychological construct so that attitude cannot be observed or measured directly. Their existence must be inferred from their consequences. Attitude is defined as (1) affect or against, (2) evaluation of, (3) like or dislike of, or (4) positiveness or negativeness toward a psychological object.(Mueller,1986)

It has been argued for sometime that fostering appropriate professional attitudes and ethical practices amongst medical students is essential. However, there is little precise evidence to identify the comprehensive range of attitudes held by medical students. Some studies focus on specific issues but very few investigate the broad picture (Price & Price, 1998). Therefore, there seems to be short of standard tool to measure the attitude of medical students pertaining to the community orientation, it is attempted to develop the tool to measure it in this data exercise.

Measuring someone's attitude is an attempt to locate his/her position on an affective continuum ranging from very positive to very negative toward an attitudinal object. There are several scales developed to measure the attitude of a particular object. Among them, Likert scale is widely used to measure the attitude. In the Likert scaling technique, the qualification is accompanied by tallying respondents' affirmation of positive and negative belief statements about the attitudinal object. In measuring attitudes toward complex and /or abstract objects, it is important to define the object thoroughly and completely.

4.2 Objective of data exercise

To explore the attitudes of first year medical students of Faculty of Medicine, Chulalornkong University, toward addressing the health and related problems in the community

4.3 Methodology

4.3.1 Study area

The study area for this data exercise is Faculty of Medicine, Chulalongkorn University.

4.3.2 Study population

First year medical students from the faculty are study population for this exercise. The total population of first year students is 190.

4.3.3 Sample size calculation

By using the sample size calculation formula from Epi Info Version 6, the sample size is calculated as follows.

The total population is 190. The proportion of medical students who will strongly agree to go to the community and serve there (the response to most important

question: question no C.16) is assumed as 0.3.The minimum accepted value is considered as 0.1. From these criteria, the sample size is calculated by using following formula.

$$S = Z * Z [P (1 - P)] / (D * D)$$

From the calculation, the sample size is 18.

4.3.4 Sampling method

Because of lack of complete sampling frame and closure of the school, probability-sampling methods can not be applied. Instead, convience-sampling method is used. It is one of the non- probability sampling methods. It does not base on the known probability, so that it has very low external validity. Therefore, it is not generalizable beyond this study.

4.3.5 Methodology

Survey is used as the research methodology. Survey is found to be appropriate for and commonly used in attitude studies to yield the descriptive knowledge of population parameters and relationships among them. It is well suited for examining the frequency of and relationship between psychological and sociological variables and taps into constructs as attitudes.

4.3.6 Data collection instrument

a. Self- administered questionnaire.

Self-administered, semi- structured questionnaire is used as data collection instrument. It comprises items in accordance with the variables for attitude measurement described in the proposal. It has three parts. First part comprises some open questions about the community approaches. The residential information, family obligation, past community exposure and willingness to go to the rural area are

investigated in this part. In the second part the choice of working place, the working institution, working condition and most admired type of professional are studied.

In the third part, there are a total of 17 items. Each item is graded by using Likert Scale of five point continuum scoring ranging from strongly agree to strongly disagree. The items are grouped into 4 variables as Attitudes towards Subject preference (4 items), Role of medical doctor (5 items), Community (5 items) and Health and its determinants (3 items). The questionnaire is described in Appendix 5.

b. In-depth interview

Another data collection instrument is in- depth interview using above four variables as interview guide- line. This is used for triangulation for findings collected by self- administered questionnaire instrument. Three medical students were interviewed in detail about their attitudes towards addressing health and related problems in the community.

4.3.7 Data analysis

The data entry and analysis were done by using Epi info version 6 and Statistical Package for Social Sciences (SPSS) soft wares.

4.4 Findings

In this study, the total sample size was 18 and the response rate was 100%. The mean age of students was 18 years and there was only small degree of variation as standard deviation was 0.064. There were 12 male students and 6 female students acting as the respondents.

4.4.1 Background variables

The variables about place of residence, the presence of family obligation and past experience of community exposure were investigated by structured questions. The strategy of approaching community and willingness to go and work in rural community were asked as open questions.

Table 4.1. Background variables

Sr. No	Variable	Response	Number	Percentage
1.	Place of residence	Urban	17	94.4
		Rural	1	5.6
2.	Family obligation	Yes	4	22.2
		No	14	77.8
3.	Working experience in community	Yes	3	16.7
		No	15	83.3

For the community approach, only 7 students (38.9%) responded to the open question. It was found that they don't know how to approach community for completion of assignment. To get cooperation from community, they have some ideas such as looking for health services and community resources (5), advertising the program (1), and explaining the purpose of the program (1).

In response to willingness to go and serve in the community, 14 students (77.8%) responded favorably and 4 (22.2%) responded unfavorably. Among those who are willing to go, they gave the reasons as to help and developing rural area (5), to gain experiences (4), to develop skills (4) and one student didn't give the reason. Those who are not willing to go gave no reason.

4.4.2 Personal preference of working environment

For this variable, personal preference about working place, working institutions, admired professionals and working conditions were asked in structured question.

Table 4.2. Preference of work place

Sr. No	Work place	Number	Percentage
1.	Cities	7	38.9
2.	Large town	7	38.9
3.	Small towns	2	11.1
4.	Rural areas	2	11.1
5.	Others	0	0

Table 4.3. Preference of working institutions

Sr. No	Working institutions	Number	Percentage
1.	Hospitals	13	72.2
2.	Public health and community related services	0	0
3.	Biomedical laboratories	1	5.6
4.	Medical schools	4	22.2
5.	Others	0	0

Table 4.4. Most admired professional

Sr. No	Professional	Number	Percentage
1.	Medical specialists	12	66.7
2.	Teachers	1	5.6
3.	Public health physicians	2	11.1
4.	Researchers	2	11.1
5.	Others	1	5.6

Table 4.5. Preference of working condition

Sr. No	Working Conditions	Number	Percentage
1.	Well equipped & full facility	6	33.3
2.	No need to interact with local people	0	0
3.	Better chance of further study	11	61.1
4.	Poor living condition	0	0
5.	Interacting with local people	1	5.6

4.4.3 Attitutude towards addreesing the health problems in the community

The attitude of students toward addressing the health problems in the community was measured according to four variables in 5-point continuum scale.

Table 4.6. Mean score of Attitude

Sr. No	Variables	Mean score
1.	Attitude towards specialty	2.53
2.	Attitude towards professional life (Role of doctor)	4.07
3.	Attitude towards health and its determinants	4.13
4.	Attitude towards community.	3.86

4.4.4. Students and their scores

The students were grouped according to their mean composite scores into three groups as low (equal or less than mean score of 3.5), medium (between mean score of 3.6 and 3.9) and high (more than mean score of 4) scorers. Their scores are described in Table 7.

Table 4.7. Students and their scores

Sr. No	Student group	Number	Percentage
1.	Low score (less than 3.5)	6	33.3
2.	Medium score (3.6 – 3.9)	10	55.6
3	High score (40 and above)	2	11.1

Among the items, the highest score was found in item C 11 (Agreement on importance of social and environmental conditions for health), which got mean score of 4.5. The lowest score was found in item C1 (Agreement on choosing clinical subject for specialization) which got only 1.28.

4.4.5 In-depth interview

The findings of in-depth interview were as follows.

Student (1)

This student was 19 years old. She was brought up in Bangkok. She didn't have any family obligation for specialty choice. However, it was found that she had some pressure from the family of choosing medical school for her education although she actually wanted to become an architect. She had no previous experience of community exposure. She could give some means to approach for approaching the community. It was found that she would not go and serve in the community because she is not interested in medicine. Therefore, she had no role model in medical profession. If she has to work as a doctor, she would work in the hospitals in big cities. She has no intention to specialize but thought that clinical subjects are most prestigious. She was found to be uncertain about her future career.

However, her general attitude toward community and professional role was found to be satisfactory.

Student (2)

This 18 years old student was also brought up in urban city life. She didn't have any family obligation for her career choice. She had some experience of community exposure. She was also able to identify some means to approach the community. She thought it would need time to gain trust from the community. She wanted to work as the medical specialist in her sports team where the modern

equipment is provided. She was found to be clinical oriented and not willing to serve in the community although her attitude toward role of the doctor and community was found to be satisfactory.

Student (3)

This 18 years old student had family obligations for her career choice. She would like to go to the rural community for a few years only because she was considering for further study and thought that better chance could be available in big cities. Her ambition was to become a teacher at medical school. Her attitude towards community and role of a medical doctor was found to be satisfactory.

4.5 Discussion

As the survey conducted used non- probability sampling method (convenience sampling method) and the sample size was small, the findings from this study are limited and generalization is not possible. In addition, the validity and reliability of instrument has not been tested. Therefore, it is not intended to generalize the findings for larger population. However, this study was conducted to get some information regarding the interested variables among medical students and to find out the strength and weakness in conducting survey for further improvement of the study described in the proposal chapter.

Mean age of students in this study was 18 years and there is no wide range of age variation. Majority of students had grownup in urban residential areas (94.4%) and had no previous community exposure (83.3%). It was found that (77.8 %) of the students had some degree of family obligation for their career choice.

Although majority of the students was found to be willing to go to rural and less developed communities, they seemed to be still clinically- oriented. This was also

found to be contradicted to the fact that majority of the students wanted to work in cities and large towns (78%). In addition to that, it was surprisingly found that no one wanted to work in the public health and related fields while (72.2%) chose hospitals for working institution, reflecting that they were highly hospital and clinically-oriented. However, they showed some degree of social obligation and humanness in giving their reason of going voluntarily to the rural areas. They were also found to be interested for further study as (61%) indicated to work in place where there is a better chance for further study.

By using the Likert scale, the attitude of students towards specialty, professional role, nature of health and its determinants and community were measured. This was, in fact, an attempt to translate the degree of willingness to address the health and related problems in the community. There were two intentions for this section. First, this data collection method would be used for comparison. However, the main variable of interest – *Attitude*, was rather subjective and difficult to measure and compare. To make a comparison, some degree of numbering was essential. This was attempted to develop a format of ranking scale by using well accepted and widely used scale such as Likert scale. By applying Likert scale and defining the variables to measure, four categories of variables were developed.

Although their scores of attitude towards the health and its determinant (mean score of 4.31) and towards professional role (mean score of 4.07) seemed to be satisfactory, their attitude towards specialty choice was rather clinical and hospital-oriented and their community- orientation seemed to be poor (mean score of 2.53). The score for community showed modest attitude resulting 3.86. This could be due to the fact that although the students realized their obligation to the community and

professional role, and understood about the complexity of health and its determinant, they were not able to practice in reality.

Although there was no specific rule, an attempt was made to categorize the students according to their scores. They were arbitrarily grouped into low, medium and high scorers based on their scores. It was found that majority were medium scorers (55.6%) followed by low scorers (33.3%). Although this division was not specific, it was found that one third of students were found to be low scorers reflecting that it is necessary to improve their attitude.

Therefore, although the findings are neither generalizable nor validated, they are expected to serve as a background information and initial step for further improvement of proposal.

4.4.6 Lessons learned

The lessons and experiences learned from this data exercise is very useful for me to understand the procedure of conducting a study from the start to the end. Moreover, it is very helpful for further improvement for the proposal described in chapter three.

The lessons learned could be divided into two broad categories.

- ◆ Administrative and

- ◆ Technical

4.6.1 Administrative

Conducting a study needs a lot of administrative consideration. It requires proper plan and systematic working procedures. Therefore, I found that the activity plan of doing a study is the most important. Starting from the initial step, each and every procedure of implementing the plan of data exercise should be followed.

To reach the final objective of the study, looking for the appropriate resources in terms of information and personal was important. By doing this data exercise, I realized the importance of information and personal resources in approaching the study area and population.

Some unexpected problem could be confronted. Initially, I tried to use the probability sampling method. However, as the time of data exercise was in holiday period for the students, I found that it was not feasible to conduct such sampling method. Therefore, it is learnt that, administrative procedures about study plan, time of conduct, the nature of study area and the availability of study population should have to be taken to an account in conducting any type of study.

4.6.2 Technical

4.6.2.1 Variable and measurement

This data exercise attempted to study the willingness and interest of the student to address the health and related problems in the community. It was, in fact, to measure the attitude towards community. It was found that, for the development of variables to study or measure, the indicators and operational definitions played a crucial role in the achievement of the goal of the study.

In this study, it is learned that there was no accepted precise definition of community orientation. Moreover, the main variable to study- *Attitude*, was not observable directly. There was no standard indicator for this purpose although some attempts were found in some studies (Linn and Zeppa, 1987). As the main variable to study was rather subjective, I found difficulties in developing the specific measurement indicators. In addition, as there was a shortage of standard tool to measure the main variable, outcome measurement would be necessary to be improved

4.6.2.2 Methodology

The methodology used in this study was survey. It is learned that survey methodology is appropriate for and studying the attitude. However, if the result of findings are intended to generalize, the sampling becomes important.. In fact, if it is not a population survey, every survey requires a sample. This sample should be enough in size and representative for the study population. Therefore, proper sample size calculation and sampling technique are essential in survey. The sampling should be probability sampling and representativeness must be assured. In this data exercise, I could not follow this principle due to administrative and time limitations. However, this step should be seriously considered in conducting surveys.

4.6.2.3 Development of Instrument

Developing data collection instrument is particularly important for measurement. In this data exercise, as the shortage of standard instrument, I have to develop the instrument by myself. The suitable instrument for this study was questionnaire. This instrument was developed in order to make a comparison. For the credibility of the questionnaire, it is also important to triangulate with another data collection method. In this data exercise, in-depth interview method was used for triangulation.

For the comparison, Likert Scale was used. In fact, in any attempt of measuring attitude towards complex and abstract object, it is important to define the object thoroughly and completely. Usually this is done by the collection of a pool of items from a group of people who has substantial knowledge in particular field. Then the pooled items are selected carefully and applied in the questionnaire. Each item must be clearly positive or negative to the object and equally distributed in the

questionnaire. I have learned that this procedure is important in developing a valid and reliable instrument.

4.6.2.4 Validity and reliability

Another important issue is validity and reliability of the instrument. This is especially important for the untested instruments. Reliability and validity are the bench mark criteria for assessing the quality of measurement devices and procedures (Mueller 1986). If the instrument is valid, it is measuring the right thing- what is supposed to be measured. If it is reliable, its measurement is consistence and accurate. In this data exercise, as the elements of measurement were not specific, the measurement was prone to an error. For this reason it should take particular care to maximize the quality of instrument and procedure. In addition, in the proposal, the attitude scores have to be compared within the group in different points of time and among the groups at the same point of time. Therefore, I have learned that high reliability must be assured in this type of study.

4.6.2.5 Conducting survey

I have also learned that possible bias in students' response should also be considered. The most possible bias was information bias. This could be found especially in the studies of knowledge and attitudes. It is learned that, this also depends on the quality and clarity of questionnaire being developed. Therefore, when the data exercise was being conducted, I had learned about this weakness.

4.6.2.6 Data analysis

There are also some valuable lessons I have learned from the data entry and analysis. The data entry was very prone to error so that counter checking is essential for precision of data entry. In data analysis, the nature of the data was just the ranking scale. Moreover, the sample size was small. Therefore, I was not able to perform any

analysis about association between variables. As I was only able to present the descriptive data, I have learned that it would be more meaningful and useful if we could manage to find any association between variables being studied.

4.7 Ethical issue

There seems to be no major ethical issue in this study. However, the students are still young, and they don't have enough orientation about the nature of their learning environment and future professional life. In addition, they seem to be not familiar about some conditions asked in the questions. As the students are at the early stage of professional life, there seems to be a little bit unethical to ask such questions, which are more suitable for the more senior students.

References

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