



CHAPTER VI

DATA COLLECTION AND PROCESSING

Data Collection.

1. Questionnaire.

The three questionnaires were sent to four groups of subjects. Mailed questionnaire was the strategy to obtain the data from most subjects. Another strategy, direct access questionnaire was used for the hospitals which there were many subjects lived there.

1.1 Mailed questionnaire.

1.1.1 1989 and new graduates. The steps of sending the questionnaire to these two groups were as follow;

a) Listing of the name of the subjects and the working place from the records of those three schools. Confirming the data by asking from their colleagues who know well, contacting with the government office which the hospitals were under responsibility especially the Division of Provincial Hospital, Ministry of Public Health.

b) Sending the letter of commitment. The

letters were sent to ask for responding the shortcoming questionnaires and giving the present position, the exact address and telephone number.

c) Making code for identifying each respondents and printing it on each questionnaire.

d) Enclosing a stamped and printed research's address return envelope.

e) Enclosing the questionnaire filled envelope to their supervisors.

f) Adhering the cover letter with the questionnaire.

g) Sending by registered mail service to ensure delivery or lost questionnaire from other reason than the not response.

h) The present, full time, working address was chosen for sending because of more higher response rate than sending to house.

1.1.1.1 Follow up procedure.

The main problem of mailed questionnaire is that the response rate is generally low which depend on the interest, intention. The most well known and performed method to increase response rate was uses of follow ups (Uthumporn Jamornmarn, 1987; Woodward, Chambers, and Smith 1982). From the reviewed document of Uthumporn Jamornmarn (1987), she concluded that the optimum waiting time for returning questionnaire is 2 weeks, maximum follow up is 5 times. In various follow up methods

(letter, postcard, card, telephone, personal contact), letter and telephone gave more increasing responses.

However, in this study three follow up with various method were used because of time constraint and high cost. The details of each follow up and initial mailing were described as follow;

1.1.1.1.1 Initial mailing. The registered mailing was used to ensure delivery. The cover letter and questionnaire were presented in the Appendix F.

1.1.1.1.2 First follow up. A postcard was used to jog people's memories about completing the questionnaire and because of lower cost than other methods. This postcard reminder was sent after ten day to all respondents. The contents of the postcard included; a brief note stress the purpose of the survey and the importance of receiving this reply, a brief thank you to those who have already completed, an invitation to get a replacement questionnaire. The example of the postcard reminder and it content were presented in the Appendix F.

1.1.1.1.3 Second follow up. A letter and second questionnaire was sent to all potential respondents who have not yet replied, three weeks after the postcard reminder. Registered mailing was used to

ensure delivery. The cover letter explained why this additional follow up was sent (Why the recipient was important, how useful the study was, how important recipient was to study's usefulness). The request to complete the questionnaire and return it quickly was made along with appreciation of cooperation.

1.1.1.1.4 Third follow up.

Telephone contact was used as the last follow up because of high cost especially when call for the respondents in the provinces outside Bangkok. Three weeks after the second follow up was planned to begin calling. For instance, the time was late until January 6, 1991 (four weeks) because of the date line was on the New Year season. During telephone conversation, the researcher made a comfortable climate and asked the respondents that they receive the questionnaire or not, and told the date line of responses.

Table 6.1 Time schedule of mailed questionnaire

PHASE	DURATION AFTER THE PREVIOUS PHASE	DATE
1. Initial mailing		Nov. 2, 1990
2. Postcard reminder	10 days	Nov. 13, 1990
3. Second questionnaire	3 weeks	Dec. 6, 1990
4. Telephone contact	4 weeks	Jan. 7, 1991
5. Date line	19 days	Jan. 25, 1991

The time schedule of every phase of mailed questionnaire was concluded in the table 6.1.

Response rate at each state was monitored by; i) stamp the date of return on each questionnaire as it was returned. ii) construct a table to record the date of sending, receiving, and follow up, the reason of not receive the return questionnaire, and also the date of complete correction as shown in table 6.2.

Table 6.2 The example of record of sending-receiving questionnaire

I.D.	SEND DATE	RECEIVE DATE	DATE OF FOLLOW UP			NOTE	DATE OF COMPLETE CORRECT.
			1	2	3		
11101	02-Nov	12-Nov					
11103	06-Nov	30-Nov					
11505	02-Nov	19-Nov	13-Nov			Not complete	11-Dec
11107	02-Nov	25-Dec	13-Nov	06-Dec			
12104	02-Nov		13-Nov	06-Dec	06-Jan	Error address	
:							

1.1.1.2 Strategy to maximizing the first wave of response. The rationale of increasing the first responses was concerned on the costs of survey. The more questionnaires that were returned directly after the first mail out, the less expensive the survey.

1.1.1.2.1 Questionnaires. They were constructed as short as possible without damage the content and objectives of the study. The clearly wording; communicability and objectivity was kept in mind while construction which made the respondents interested. The change of wording were showed in the previous chapter.

1.1.1.2.2 Cover letter.

Personalization was used as strategy in cover letter, included naming of individual respondent in the cover letter specifically, signing each letter individually. Promises of anonymity or confidentiality was also included. The researcher's name, address, and easily contacted telephone number were written. The importance and objectives of the study, the importance of replying were introduced.

1.1.2 1989 and new graduates'

supervisors. The step of sending the questionnaire was the same as described in the previous section. In addition, the name of the supervisors were checked clearly from any mentioned sources and by direct contact the graduates before sending the questionnaires.

Follow up procedure was also the same which include three times with; first postcard reminder, second registered mail questionnaire, third telephone. In order

to reduce the cost of mailing, in the initial mailing the supervisors' questionnaires were attached with the graduates' questionnaires. For the next phase, the letters were sent directly to the supervisors. Record of sending and receiving was also done.

1.2 Direct access questionnaire This method was used only for the hospital in Bangkok which many graduates were working in (e.g. 4 to 6 graduates) and was easy for transportation. These were Vachira Hospital, Klang Hospital, Taksin Hospital, Siriraj Hospital, Bangkok Hospital, Bangkok Christian Hospital, and Chulalongkorn Hospital. Another more important reason was the ratio of supervisors to graduates in these hospital was not 1:1 as needed. This meant that each supervisor should evaluate more than one graduate. Therefore the direct contact was the best way to convince the supervisors to participate. Each time of visit, the researcher brought some dessert to the respondents as a motivation.

The questionnaires were sent on November 6, 1990 and asked to response approximately two weeks later on November 23, 1990. Although the date line was violated in some places all responses completed before the date line of the mailed questionnaire.

2. Response rate

The response rate of each questionnaire both sending strategies were showed in table 6.3.

Table 6.3 Response rate of each questionnaire in different phase

Phase	Cumulative No. and % of Response of the questionnaires sent by 2 methods		
	Mailed	Direct Access	Both
A. Questionnaire of the New Graduates			
Total	34 (64.15)	19 (35.85)	53 (100.00)
Postcard reminder	10 (29.41)	0 (0.00)	10 (18.87)
Second questionnaire	28 (82.35)	15 (78.95)	43 (81.13)
Telephone contact	32 (94.12)	19 (100.00)	51 (96.23)
Final	32 (94.12)	19 (100.00)	51 (96.23)
B. Questionnaire of the 1989 Graduates			
Total	35 (76.09)	11 (23.91)	46 (100.00)
Postcard reminder	18 (51.43)	0 (0.00)	18 (39.13)
Second questionnaire	28 (80.00)	10 (90.90)	38 (82.61)
Telephone contact	34 (97.14)	11 (100.00)	45 (97.83)
Final	34 (97.14)	11 (100.00)	45 (97.83)
C. Questionnaire of the Supervisors of the New Graduates			
Total	34 (64.15)	19 (35.85)	53 (100.00)
Postcard reminder	12 (35.29)	0 (0.00)	12 (22.64)
Second questionnaire	28 (82.35)	13 (68.42)	41 (77.36)
Telephone contact	28 (82.35)	19 (100.00)	47 (88.68)
Final	32 (94.12)	19 (100.00)	51 (96.23)
D. Questionnaire of the Supervisors of the 1989 Graduates			
Total	35 (76.09)	11 (23.91)	46 (100.00)
Postcard reminder	13 (37.14)	0 (0.00)	13 (28.26)
Second questionnaire	24 (68.57)	10 (90.90)	34 (73.91)
Telephone contact	32 (91.43)	11 (100.00)	43 (93.48)
Final	33 (94.29)	11 (100.00)	44 (95.65)

3. Problems of questionnaire responses

3.1 Not-responses

3.1.1 Mailed questionnaire. The follow up methods used for enhancing the response. One cause of not-responses was the respondents fear of misuse of the data by the other professions. To solve this problem, the researcher introduce himself as physical therapy profession who need to use the data as useful as possible in developing the profession. It was performed while sending of the second questionnaire.

3.1.2 Direct access questionnaire. To reduce this problem, the time of return the questionnaire was flexible as possible.

3.2 Error address. There were 2 respondents whose address were wrong. One could not be found the correct address, but another could.

Data Processing

When the data were collected, they were prepared for further analysis. The steps in data processing was suggested as follow (Suchart Prasith-rathsint, Laddawan Rodmanee, and Paitoon Pakdi, 1986); i) checking or editing the data, ii) precoded questionnaire, iii) computer processing.

1. Checking or editing the data.

Since the questionnaires have a lot of data. The objectives of this procedure was to examine completeness, accuracy. The questionnaires (either mailed or direct access) were checked within one week of return in order to immediately correct the data by contacting with the respondents.

1.1 Completeness. The data were checked for blank or not answered question. The corrections were done immediately by returning to the respondents. The details of the non-responding items were also sent. In order to conserve the existing the data as much as possible, the questionnaires were copied before returning. The cover letter was developed to ask for help in correction and to explain how useful of the data. This return procedure was done only one time.

1.2 Accuracy. This procedure checked for consistency between question items or consistency of the answer to the objectives. If this was the problems, the questionnaires would be returned to ask for correction. The methods were the same as above.

The researcher checked all responded questionnaires (not sampled checking) because to correct all mistaken data. The number and percentage of returned questionnaires for correction were 24 (45.28%)

for the new graduates, 6 (13.04%) for the 1989 graduates, 11 (20.75%) for the supervisors of the new graduates, 8 (17.39%) for the supervisors of the 1989 graduates.

The corrected questionnaires which had blank items or wrong answers more than 25% of all items were excluded from this study. The table 6.4 showed the available questionnaires after editing process.

Table 6.4 The available and excluded questionnaires

No. of Questionnaire	Kinds of Questionnaire			
	New Grad.	1989 Grad.	Supervisors of New Grad.	Supervisors of 1989 Grad.
Sending	53	46	53	46
Not-responses	1	1	1	1
Lost*	2	0	1	1
Mistaken questionnaire	0	0	0	2
Available questionnaire	50 93.34%	45 97.83%	51 96.23%	42 91.30%

*There were many causes of lost; during returning for correction, error address

2. Precoded questionnaire.

All questionnaires were coded before sending to the subjects. The codes were run in series of the items and were separated into 4 groups according to the data type (e.g. opinion about educational factors, professional competence of attitude and cognitive domain). This arrangement was also in the limitation of 80 characters in each line which allowed by the computer. However the codes were also checked again before

analysis.

3. Computer processing.

The Statistical Package for Social Sciences operated on IBM personal computer (SPSS/PC+™) was used for statistical analysis in this study (Norusis, 1986).



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