

CHAPTER III

RESEARCH METHODOLOGY

3.1 Study Design

This is a cross sectional descriptive study.

3.2 The Study Area

This study was done at national referral Hospital, Thimphu, Bhutan.

3.3 The Study Population

The study population consists of 36 doctors, 120 nurses, 88 technicians (36 lab. Techs, 11 dental techs, 15 pharmacists, 7 x-ray techs, 5 ophthalmic assistants, 8 physiotherapy-tech and 6 operation theatre techs), and 60 auxiliary staff (31 sweepers and 29 ward boys). This comes to a total of 304.

3.4 Sample Size will be Minimum of 273

3.5 Sampling Method

No sampling method has been employed.

Inclusion criteria: All of the study population who are in station at the time of study were included, which is a minimum of 273 respondents.

Exclusion criteria: National referral hospital being the largest in the country acts as buffer for human resource and technical backup for all the health facilities within the country, therefore 10% (31 respondents) of the study population has been excluded from the sample. They will be out of station for various reasons like temporary posting to peripheral units or on leave or on training etc.

3.6 Research Instrument

The researcher will use self-administered questionnaire to obtain information from doctors, dentists, nurses and technicians. The information from the auxiliary staff will be obtained through structured standardized questionnaire by trained interviewers.

3.6.1 Self administered questionnaires

Both the self-administered questions for the doctors, dentists, nurses and technicians, and the questions for interviewing the auxiliary staff will be in English. In Bhutan the minimum qualification as an auxiliary staff is class VI, therefore these people although not able to write well can at least understand the questions in English.

Part 1 Socio-demographic variable, which includes age, gender, education, job category, waste management training and number of years in service.

There will be both closed-ended and open-ended questions.

Part 2 is a test on the knowledge in infectious waste management. It covers UP, segregation, collection, transportation, disposal and hazards of infectious wastes. Only closed-ended questions will be used.

Part 3 is a test on attitude towards infectious waste management. It includes attitude towards UP, segregation, collection, transportation, disposal and hazards of infectious wastes. Only closed- ended questions will be used.

Part 4 is a test on the behavior towards infectious waste management. It comprises of UP, segregation, collection, transportation, disposal and hazards of infectious waste. Only closed ended questions will be used.

Part 5 It will consist of open and closed ended questions on the hospital policy and policy deployment in proper management of infectious wastes. It will also include open-ended questions on recommendations for proper management of infectious wastes.

3.6.2 Steps and details in construction of the questionnaire

The questionnaire was constructed based on the following:

- (1) Literature review was done to define the parameters of the study, learn what others have done and what others have recommended.
- (2) Some standard questions were adapted from other studies and some questionnaires will be constructed in accordance with the set content and framework.
- (3) For validity the questionnaire was circulated to at least 3 content experts for comments, views and necessary changes were incorporated in consultation with the advisor.
- (4) For reliability the questionnaires was pre-tested on a population of 20 persons, similar to the actual samples at Paro hospital Bhutan. The answers were graded and analyzed using Cronbach's Alpha

Coefficient formula (Boontham Kijpredaborisuth, 1994: 251) in the computer SPSS program. The question to measure knowledge on infectious waste management with reliability of 0.7 and above was considered as reliable and selected for the research.

The questions to measure attitude on infectious waste management with reliability of 0.7 and above were considered reliable and selected for the research.

Reliability test for the questions on behavior in infectious waste management with reliability of 0.7 and above was selected for research.

3.6.3 Data collection

- (1) The researcher requested the superintendent of national referral hospital for permission to collect the information in writing.
- (2) The self administered questionnaires for the professionals was distributed to the respondents while on duty and expected to be returned to the researcher the next day few days.
- (3) The 60 auxiliary staff was interviewed by two trained interviewers within the hospital complex during their working hours. Two class XII students were trained for half a day as interviewer.

3.7 Data Analysis

The completed questionnaires were coded and entered into SPSS computer program and the following was done in steps.

1. The test on knowledge of infectious waste management was multiple choices with 10 questions. The right answer gets 1 point and 0 point for the wrong one. Total scores will be graded as high, and low.
2. The test on attitude towards infectious waste management comprises of 10 questions and scoring criteria was as follows;

Attitude	Score for positive statement	Score for negative statement
Strongly Agree	5	1
Agree	4	2
Neutral	3	3
Disagree	2	4
Strongly Disagree	1	5

After scoring, the respondents' attitude was classified into positive or negative attitude.

3. The test on behavior on infectious waste consists of 10 questions and the answers had 5 levels and scoring was done as follows;

Always gets	5	1
Often gets	4	2
Sometimes	3	3
Seldom gets	2	4
Never gets	1	5

After adding up the scores for each respondent, they were grouped into good and bad.

4. The test on policy and consists of 4 questions and the answers have 4 levels and scoring criteria is as follows;

Perception	Scores for positive statements	Scores for negative statements
Least Important	1	5
Less Important	2	4
Neutral	3	3
Important	4	2
Very Important	5	1

The scores were added for each respondent and divided by 4 questions and the mean was ranked.

5. The test on deployment of policy consisted of 5 questions and the answers had 5 levels and scoring criteria was as follows;

Perception	Scores for positive statements	Scores for negative statements
Least important	1	5
Less Important	2	4
Neutral	3	3
Important	4	2
Very Important	5	1

The scores were added and ranked.

The coded questionnaire was entered and analyzed in SPSS (statistical soft ware package for social sciences) for the following values:

1. Descriptive statistics:

Sl. No.	Variables	Measurement scale	Descriptive statistics
A	Independent		
1	Background variables		
	Age	Continuous	Max, Min, Mean, SD
	Gender	Nominal	Proportion
	Job Category	Ordinal	Proportion
	Education level	Ordinal	Proportion
	Training	Nominal	Proportion
	No. of years in service	Continuous	Max, Min, Mean, SD
2	Knowledge	Continuous & Ordinal (2 scales)	Max, Min, Mean, SD, proportion.
3	Attitude	Continuous & Ordinal (2 scales)	Max, Min, Mean, SD, Proportion.
4	Policy	Ordinal	Max, Min, Mean, SD
5	Deployment of policy	Ordinal	Max, Min, Mean, SD
B	Dependent		
1	Behavior	Continuous & Ordinal (2 scales)	Max, Min, Mean, SD, Proportion.

2. Statistical Analysis:

Analyze relationship between independent and dependent variables through Chi-Square test and other relevant tests.

3. Recommendations: Elaborate on information for recommendations by number and percentage.

3.8 Benefits of the Study

The result of the study will help in finding gaps in knowledge, attitude and behavior of health care workers. This information will be utilized in writing a comprehensive waste management plan for the hospital and will serve as contribution for any future legislation on occupational health and safety.

3.9. Ethical Consideration

The information obtained from the questionnaire will be utilized purely for this study and confidentiality will be maintained. None of the questionnaire can be traced back to the respondents. Each respondent will be asked for their consent before answering the questions.

3.10 Limitation of the Study

- 1) Infectious waste in this study did not include the liquid wastes, which might be important for a 200-bedded hospital as it might produce large amount of it. Specific guidelines for management of liquid infectious wastes may be necessary.
- 2) Information for this study was obtained from professional and auxiliary health workers through the same questionnaire. This was found not suitable as different job categories have different job responsibilities in the management of infectious waste.
- 3) Only quantitative assessment of the behavior of health workers had been done in this study which may not give the true behavior.

3.11 Time Activity Schedule

Activity	Sept 03	Oct	Nov	Dec 03	Jan 04	Feb	Mar	Apr	May	Jun	Jul	Aug 04	
Preparation of thesis protocol			←	→									
Defense of thesis protocol							←	→					
Data collection								←	→				
Data analysis										←	→		
Report writing											←	→	
Presentation of thesis report												←	→

3.12 Estimated Budget

Sl. no	Activity	Unit cost \$	Total unit	Total amount \$
1	Airfare	408	2	816.00
2	Photocopy	1	160	160.00
3	Stationeries	0.40	160	64.00
4	Refreshment	0.50	160	80.00
5	Others			50.00
Total:				1,170.00 US\$