Contents

	page
บทคัดย่อ	(3)
Abstract	(4)
Acknowledgements	(5)
Contents	(6)
List of Tables	(8)
List of Illustration	(9)
Chapter	
1 Introduction	1
1.1 Objective	2
1.2 Research Hypothesis	2
1.3 Definition of Terms	3
1.4 Review of Literature	4
1.4.1 Concepts and Theory of Diarrhea Disease	4
1.4.2 Literature Review	7
2 Methodology	10
2.1 Study Design	10
2.2 Population and Samples	10
2.3 Variables	14
2.4 Data Collection and Data Management	14
2.5 Statistical Methods	16
2.6 Graphical Methods	22
3 Preliminary Data Analysis	24
3.1 Description of the Database	24
3.2 Frequency Distributions of Socio-demographic and Environmental Factors	25
3.3 Frequency Distributions of Knowledge Factors	31
3.4 Frequency Distributions of Behaviour Factors	33

page

3.5 Association between the Outcome and Each Determinant 36

4 Further Analysis and Statistical Modeling 49

4.1 Logistic Regression Analysis Method 49

4.2 Results 50

4.3 Model of log odds of Sickness with Diarrhea Disease 58

4.4 Model of Probability of Sickness with Diarrhea Disease 59

5 Conclusions and Discussion 60

5.1 Conclusions 60

5.2 Discussion 62

5.3 Suggestion and Future Research 64

References 66

Appendix 69

Vitae 84

List of Tables

Table		Page
2.1	Distributions of the 22 villages of Panarehk District sampled	12
3.1	Distribution of socio-demographic factors	29
3.2	Distribution of environmental factors	30
3.3	The association between socio-demographic factors and sick with diarrhea	37
3.4	The association between socio-demographic factors and diarrhea sickness	38
3.5	The associations between environmental factors and diarrhea sickness	39
3.6	The association between knowledge factors and diarrhea sickness	42
3.7	The association between behavior factors and diarrhea sickness	45
4.1	Association between determinants and diarrhea disease	49

List of Illustrations

Figure		Page
2.1	Schematic diagram of random stratification method	11
2.2	Schematic diagram of variables of interest	13
3.1	The structure of the database	25
3.2	Histograms and numerical summaries of socio-demographic factors	26
3.3	Histograms and numerical summaries of environmental risk factors	27
3.4	Histograms and numerical summaries of knowledge factors	32
3.5	Histograms and numerical summaries of danger signs in a diarrhea patient	33
3.6	Histograms and numerical summaries of behaviour factors	34
3.7	Histograms and numerical summaries of breast milk factors	35
3.8	Histograms and numerical summaries of can milk factors	35
3.9	Histograms and numerical summaries of fresh milk factors	36
3.10	Box plots comparing age of child carers and diarrhea sickness	37
3.11	Association between sex and diarrhea sickness	38
3.12	Association between water quality and diarrhea sickness	39
3.13	Association between domestic animal and diarrhea sickness	40
3.14	Association between garbage disposal and diarrhea sickness	41
3.15	Association between defecation place and diarrhea sickness	41
3.16	Association between symptom of diarrhea and diarrhea sickness	43
3.17	Association between knowledge of transfers of diarrhea patients	44
3.18	Association between knowledge of keeps ORS solution and diarrhea sickness	44
3.19	Association between washing hand after use toilet and diarrhea sickness	46
3.20	Association between keeps food over night and diarrhea sickness	46
3.21	Association between clean dresser's patient and diarrhea sickness	47
3.22	Association between cutting fingernails and diarrhea sickness	48
4.1	Logistic regression model for diarrhea disease with risk factors	51
4.2	Logistic regression model for diarrhea disease after six factors omitted	52
4.3	Further reduced logistic regression model for diarrhea disease after two more factors are omitted	53

Figure Page

4.4 Further reduced model for diarrhea disease 54
4.5 Logistic regression model for diarrhea disease with risk factors after knowledge of cause of death and wash after use of toilet are omitted 55
4.6 Logistic regression model for diarrhea disease with risk factors after filthy water is omitted 56
4.7 Logistic regression model for diarrhea disease with risk factors after religion is omitted 57