

**THE MAGNITUDE AND DETERMINANTS OF CONDOM USE  
AMONG DIRECT COMMERCIAL SEX WORKERS (DCSWs) AT  
THE CAMBODIAN-THAI BORDER IN OSMACH COMMUNE,  
ODDAR MEANCHEY PROVINCE, CAMBODIA**



**Mrs. Nisachon Bubpa**

**A Thesis Submitted in Partial Fulfillment of the Requirements  
for the Degree of Master of Public Health in Health Systems Development**

**Collage of Public Health  
Chulalongkorn University**

**Academic Year 2004**

**ISBN 974-9599-76-4**

**Copyright of Chulalongkorn University**

Thesis Title : The Magnitude and Determinants of Condom Use among Direct Commercial Sex Workers (DCSWs) at the Cambodian-Thai Border in Osmach Commune, Oddar Meanchey Province, Cambodia

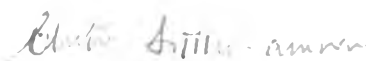
By : Mrs. Nisachon Bubpa

Program : Health Systems Development

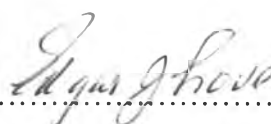
Thesis Advisor : Ratana Somrongthong, Ph.D.


---

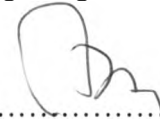
Accepted by The College of Public Health, Chulalongkorn University, Bangkok Thailand in Partial Fulfillment of the Requirements for the Master's Degree

x  ..... Dean of The College of Public Health  
(Professor Chitr Sitthi-amorn, M.D., M.Sc., Ph.D.)

#### THESIS COMMITTEE

 ..... Chairperson  
(Professor Edgar J. Love, M.D., Ph. D.)

 ..... Thesis Advisor  
(Ratana Somrongthong, Ph.D.)

 ..... Member  
(Assistant Professor Marc Van der Putten, Ph.D.)

PH: 042421 : MAJOR HEALTH SYSTEMS DEVELOPMENT PROGRAMME  
 KEY WORDS : MAGNITUDE/DETERMINANTS/DIRECT COMMERCIAL SEX  
 WORKERS/CONDOM USE/THE CAMBODIAN-THAI BORDER  
 NISACHON BUBPA: THE MAGNITUDE AND DETERMINANTS OF  
 CONDOM USE AMONG DIRECT COMMERCIAL SEX WORKERS  
 (DCSWs) AT THE CAMBODIAN-THAI BORDER IN OSMACH  
 COMMUNE, ODDAR MEANCHEY PROVINCE, CAMBODIA. THESIS  
 ADVISOR: RATANA SOMRONGTHONG, Ph.D.105 pp.ISBN 974-9599-76-4

The main purpose of the study was to measure the magnitude and identified determinants related to condom use among Direct Commercial Sex workers (DCSWs) at the Cambodian-Thai border in Osmach town, Oddar Meanchey Province, Cambodia. This cross-sectional study was conducted from January 25- February 9, 2005. The subjects were DCSWs who are brothel-based with a total of 62 participants from 13 brothels. Data were gathered using an interview questionnaire, Focus Group Discussion and In-depth interviews. The PRECEDE Framework was applied as the conceptual framework of the present study. Data was analysed in terms of frequency distribution, and Chi-square test was used to determine the association between independent and dependent variables. Binary logistic regression was used to determine the relationship between independent variables and condom use.

This study found that the magnitude of condom use among DCSWs in Osmach (76%) is lower than the pilot project of 100% CUP in Sihanoukville, Cambodia (78%) and Thailand (98%). The condom use rate with steady partners/sweethearts in Osmach is lower than condom use rate with steady partners/sweethearts of the pilot project of 100% CUP in Sihanoukville, Cambodia (52% v 64%). The condom use rate of DCSWs in Osmach, the using rate with steady partners/sweethearts is lower than the using rate with clients (52% v 97%).

This study indicated that factors having a significant association with condom use among DCSWs were having steady partners/sweethearts, experience of abortion since working in the profession, and age of clients ( $p < .001$ ,  $p = .045$  and  $p = .030$  respectively). Binary logistic regression result showed that having a steady partner/sweetheart was statistically significantly associated with condom use ( $p = .010$ , OR = .191, 95%CI: 0.054 to 0.677), and age of clients ( $p = .039$ , OR = .5.583, 95%CI: 1.090 to 28.597). From the qualitative result, many DCSWs failed to persuade clients to use condom, which caused them to have less clients, they would consider accepting to have sex without using condom.

This study may assist authorities and NGOs to develop appropriate health promotion concerning increasing awareness of protecting STD and HIV/AIDS for DCSWs and their steady partners/sweethearts in the border area of Oddar Meanchey Province, Cambodia.

Field of study Health Systems Development

Student's signature

*Nisachon Bubpa*

Academic year 2004

Advisor's signature

*Ratana Somrongthong*

## ACKNOWLEDGEMENTS

This academic work would not have been accomplished without valuable and grateful guidance of a number of persons. I hereby extend my sincere acknowledgements and thanks to all concerned with special mentions of the following:

I would like to thank Professor Edgar J. Love, chairperson of my thesis exam, and Dr. Marc Van der Putten for being my thesis examiner for consenting to be my mentor and guides in this initial venture of mine in research.

I would like to thank particularly Ajarn Ratana Somrongthong, my advisor who spent her valuable time tirelessly guiding me throughout the whole period of this thesis. Without her support and encouragement, I would not have passed those hardest days and the completion of this thesis would not have been possible.

I would not have finished this course if there was no support from the following people such as Sunanta Wongchalee a librarian, Prapon Phothong a computer technician and academic staff. Special thanks go to Peraya Aungudornpukdee a Ph.D. student who spent a great deal of her time to help me for statistical analysis. I found that her suggestion was highly statistically significant association with my graduation ( $p < .001$ ). All of you are a grate people. This is from my heart again, thanks so much for your kind support. I will always remember you all.

I would like to make a special mention and acknowledgement to ATC, Malteser and CARE International organization that work in Oddar Meanchey Province, Cambodia who provided me with support during my data collection as well as Provincial Health Department and health center staff particularly Dr. Ouk Kim Souen and Dr. Ngoun Sokomar. Most importantly, I would also like to thank to all of DCSWs, brothel owners and Osmach health centre staff who agreed to participate in the study and made the data collection complete and worthwhile. I owe everyone who was involved in this study in one way or another.

To all of my friends who are working in Thailand and abroad, and friends of this MPH cohort, my thanks for sharing emotions and encouraging me to complete the study. Special, thanks go to Aree Mounsookjareon who introduced this course and supports me all the times as well as Dr. Sabine Heinrich and Dr. Frances Daily who edited my English. Your suggestions, recommendations, and helps make my dreams come true.

And lastly, I am immensely thankful for my family for their moral and valuable supports particularly to my husband. Thanks for being a good listener, counselor and with his warmth, love and support led me from beginning to the completion of my study. I will make sincere efforts to make up for twelve months we missed one another.

## TABLE OF CONTENTS

	Page
<b>ABSTRACT</b> .....	iii
<b>ACKNOWLEDGEMENTS</b> .....	iv
<b>TABLE OF CONTENTS</b> .....	v
<b>LIST OF TABLES</b> .....	viii
<b>LIST OF FIGURE</b> .....	x
<b>LIST OF ABBREVIATIONS</b> .....	xi
<b>CHAPTER I INTRODUCTION</b> .....	1
1.1 Background and Significance of the Problem.....	1
1.2 Purpose of the Study.....	5
1.3 The Objectives of the Research.....	5
1.4 Research Questions.....	6
1.5 Conceptual Framework of the Research.....	6
1.6 Research Variables.....	7
1.7 Operation Definitions of Terms Used in the Research.....	7
1.8 Expected Outcomes.....	9
<b>CHAPTER II LITERATURE REVIEW</b> .....	10
2.1 Sex Workers and HIV/AIDS Situation in Asia, Thailand and Cambodia.....	10
2.2 Theories and Concepts Related to the Research.....	16
2.3 Related Research.....	18
<b>CHAPTER III RESEARCH METHODOLOGY</b> .....	26
3.1 Site of Study.....	26
3.2 Research Design.....	26
3.3 Sampling Method and Sample Size.....	26
3.4 Research Instruments.....	28
3.5 Measurement Methods for Quantitative Data.....	29
3.6 Quality of Research Instruments.....	32

3.7	Procedure of Data Collection.....	32
3.8	Data Analysis.....	33
3.9	Ethical Considerations.....	33
<b>CHAPTER IV RESULTS.....</b>		<b>34</b>
4.1	Quantitative Data Analysis.....	34
4.1.1	Univariate Analysis.....	34
4.1.1.1	Predisposing factors .....	35
4.1.1.2	Reinforcing factors.....	46
4.1.1.3	Enabling factors.....	49
4.1.1.4	Condom use among DCSWs.....	51
4.1.2	Bivariate Analysis.....	52
4.1.2.1	Bivariate Analysis of Predisposing factors and Condom Use.....	53
4.1.2.2	Bivariate Analysis of Reinforcing factors and Condom Use.....	55
4.1.2.3	Bivariate Analysis of Enabling factors and Condom Use.....	53
4.1.3	Multivariate Analysis using Binary Logistic Regression Model...	56
4.2	Qualitative Data Analysis.....	57
4.2.1	Introduction.....	57
4.2.2	Findings.....	58
4.2.2.1	Focus group discussion.....	58
4.2.2.2	In-depth interviews.....	62
4.2.3	Summary.....	66
<b>CHAPTER V DISCUSSION, CONCLUSION AND RECOMMENDATIONS.....</b>		<b>68</b>
5.1	Discussion.....	68
5.1.1	The Magnitude of Condom Use among DCSWs.....	68
5.1.2	Factors Related to Condom Use among DCSWs.....	69
5.2	Conclusion.....	75

5.3	Scope and Limitations of the Study.....	76
5.4	Recommendations.....	77
5.5	Recommendations for Further Study.....	78
	<b>REFFERENCES.....</b>	<b>79</b>
	<b>APPENDICES.....</b>	<b>87</b>
	APPENDIX A : Budget for Data Collection.....	88
	APPENDIX B : Schedule of Activities .....	89
	APPENDIX C : Questionnaire.....	90
	APPENDIX D : Guidelines for Focus Group Discussion of DCSWS.....	97
	APPENDIX E : Guidelines for In-depth Interview of Health Center staff.....	99
	APPENDIX F : Guidelines for In-depth Interview of Brothel Owners.....	100
	APPENDIX G : Informed consent form (Quantitative research).....	101
	APPENDIX H : Informed consent form (Qualitative research).....	102
	<b>CURRICULUM VITAE.....</b>	<b>103</b>

## LISTS OF TABLES

	Page
<b>Table 1:</b> The estimated number of sex workers from selected countries in Asia.....	11
<b>Table 2:</b> The estimates of HIV prevalence rates from sentinel surveillance from many countries.....	12
<b>Table 3:</b> Measurement Method (Designing in scale).....	31
<b>Table 4:</b> Frequency and Percentage of Predisposing factor (Demographic Characteristics) of the Study Population.....	39
<b>Table 5:</b> Frequency and Percentage of the Study Population as categorized according to Having steady partner/sweetheart.....	42
<b>Table 6:</b> Frequency and Percentage of the Study Population as categorized according to Having dependent people.....	42
<b>Table 7:</b> Frequency and Percentage of the Study Population as categorized according to Duration in the profession.....	43
<b>Table 8:</b> Frequency and Percentage of the Study Population as categorized according to Past history of STD .....	43
<b>Table 9:</b> Frequency and Percentage of the Study Population as categorized according to Knowledge regarding STD and HIV/AIDS .....	45
<b>Table 10:</b> Frequency and Percentage of the Study Population as categorized according to Attitude regarding STD and HIV/AIDS.....	46
<b>Table 11:</b> Frequency and Percentage of the Study Population as categorized according to Reinforcing factors of Clients characteristics.....	47
<b>Table 12:</b> Frequency and Percentage of the Study Population as categorized according to Reinforcing factors of Brothel owner/manager/pimps....	48
<b>Table 13:</b> Frequency and Percentage of the Study Population as categorized according to Reinforcing factors of Peers.....	48
<b>Table 14:</b> Frequency and Percentage of the Study Population as categorized according to Reinforcing factors of Availability of condoms.....	49
<b>Table 15:</b> Frequency and Percentage of the Study Population as categorized according to Reinforcing factors of Availability of health services.....	50



<b>Table 16:</b> Frequency and Percentage of the Study Population as categorized according to Reinforcing factors of Negotiation skills of DCSWs.....	51
<b>Table 17:</b> Frequency and Percentage of Condom Use among DCSWs.....	52
<b>Table 18:</b> Association between Predisposing factors and Condom Use .....	53
<b>Table 19:</b> Association between Reinforcing factors and Condom Use.....	55
<b>Table 20:</b> Association between Enabling factor and Condom Use.....	56
<b>Table 21:</b> Relationship among Factors and Condom Use.....	57

## LISTS OF FIGURE

	Page
<b>Figure 1:</b> Modified from PRECEDE model.....	6

## LIST OF ABBREVIATIONS

AIDS	:	Acquire Immunodeficiency Syndromes
BSS	:	Behavioral surveillance Survey
CSW(s)	:	Commercial Sex Worker(s)
CUP	:	Condom Use Program
DCSW(s)	:	Direct Commercial Sex Worker(s)
HIV	:	Human Immunodeficiency Virus
ICRC	:	International Committee of Red Cross
IDCSW(s)	:	Indirect Direct Commercial Sex Worker(s)
IEC	:	Information, Education and Communication
MoPH	:	Ministry of Public Health
NCHADS	:	National Center of HIV/AIDS, Dermatology and STDs
PAO	:	Provincial Aids Office
PHD	:	Provincial Health Department
PSI	:	Population Services International
STD	:	Sexual Transmitted Diseases
STIs	:	Sexual Transmitted Infectious
UNAIDS	:	Joint United Nations Programme on HIV/AIDS
WHO	:	World Health Organization