

COST ANALYSIS OF THE DISABILITY VICTIMS BY ALCOHOL
DRUNK DRIVING FROM TRAFFIC ACCIDENT:
A CASE STUDY IN BANGKOK

Mr. Pichapong Pokapun

A Thesis Submitted in Partial Fulfilment of the Requirements
for the Degree of Master of Science Program in Health Economics
Faculty of Economics
Chulalongkorn University
Academic Year 2008
Copyright of Chulalongkorn University

ต้นทุนของเหยื่อผู้พิการเนื่องด้วยเมาแล้วขับจากอุบัติเหตุจราจร :
กรณีศึกษาเขตกรุงเทพมหานคร

นายพิชพงษ์ โภคาพันธ์

วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญา วิทยาศาสตร์มหาบัณฑิต

สาขาวิชาเศรษฐศาสตร์สาธารณสุข

คณะเศรษฐศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย

ปีการศึกษา 2551

ลิขสิทธิ์ของจุฬาลงกรณ์มหาวิทยาลัย

510780

พิชชพงศ์ โภคาพันธ์ : ต้นทุนของเหยื่อผู้พิการเนื่องด้วยเมาแล้วขับจากอุบัติเหตุจากรถ;
กรณีศึกษา เขต กรุงเทพมหานคร. (COST ANALYSIS OF THE DISABILITY VICTIMS
BY ALCOHOL DRUNK DRIVING FROM TRAFFIC ACCIDENT; A CASE STUDY IN
BANGKOK) อ.ที่ปรึกษาวิทยานิพนธ์หลัก: รศ. ดร. พงศา พรชัยวิเศษกุล, 183 หน้า.

อาการเมาแล้วขับยังคงเป็นสาเหตุอันดับต้นๆที่สำคัญในการเกิดอุบัติเหตุทางท้องถนน
ในประเทศไทย และจำนวนเหยื่อผู้เคราะห์ร้ายจากการเมาแล้วขับที่ต้องประสบกับความพิการเอง
นั้น ก็ได้มีจำนวนเพิ่มขึ้นทุกปีเช่นเดียวกัน

วัตถุประสงค์ของการศึกษาวิจัยนี้ ได้มุ่งเน้นการวิเคราะห์เกี่ยวกับต้นทุนของเหยื่อ
ผู้พิการและญาติของผู้พิการเนื่องด้วยเมาแล้วขับจากอุบัติเหตุจากรถ;กรณีศึกษา กรุงเทพมหานคร
โดยศึกษาต้นทุนในการรักษาพยาบาลในหนึ่งปีแรกนับจากวันที่ประสบอุบัติเหตุ

การวิจัยครั้งนี้ได้ทำการศึกษาดำเนินการโดยใช้แบบสอบถามเป็นเครื่องมือในการเก็บข้อมูล
itudy จากการศึกษาตัวอย่างสมาชิกเครือข่ายมูลนิธิเมาไม่ขับ จำนวน 95 ตัวอย่าง โดยต้นทุนของ
เหยื่อผู้พิการเนื่องด้วยเมาแล้วขับจากอุบัติเหตุจากรถนั้น สามารถจำแนกย่อยได้เป็น ต้นทุนของผู้
พิการจากการตกเป็นเหยื่อเมาแล้วขับ และญาติของผู้พิการจากการตกเป็นเหยื่อเมาแล้วขับ ซึ่ง
ต้นทุนทั้งสองนั้น ได้ประกอบด้วยต้นทุนทางตรง และทางอ้อม และต้นทุนทางการรักษาพยาบาล
และ ไม่เกี่ยวข้องกับการรักษาพยาบาล ซึ่งต้นทุนแต่ละต้นทุนจะได้จำแนกในแต่ละประเภทเป็น
ส่วนๆที่เกี่ยวข้องกัน และจะถูกนำมาใช้ในการคำนวณ วิเคราะห์ต้นทุน เพื่อสรุปหาต้นทุนรวม

ผลของการศึกษาวิจัยพบว่า ในระยะหนึ่งปีแรกหลังจากเหยื่อประสบอุบัติเหตุต้นทุนของ
เหยื่อผู้พิการเนื่องด้วยเมาแล้วขับจากอุบัติเหตุจากรถ เท่ากับ 603,235.52 บาท ต่อ คน, ต้นทุน
ของญาติผู้ดูแลเหยื่อผู้พิการเนื่องด้วยเมาแล้วขับจากอุบัติเหตุจากรถ เท่ากับ 612,682.54 บาท
ต่อ คน และ ต้นทุนรวมของเหยื่อผู้พิการและญาติผู้ดูแลเนื่องด้วยเมาแล้วขับจากอุบัติเหตุจากรถ
เท่ากับ 1,215,918.06 บาท ต่อ คน

จากการศึกษาวิจัยที่มีผลกระทบต่อต้นทุนค่าใช้จ่ายที่เพิ่มขึ้นของผู้พิการที่เป็นเหยื่อ
เมาแล้วขับ พบว่า รายได้ของผู้พิการก่อนประสบอุบัติเหตุ และญาติผู้ดูแล มีความสัมพันธ์กับ
ต้นทุนในทิศทางเดียวกันอย่างมีนัยสำคัญ

สาขาวิชา...เศรษฐศาสตร์สาธารณสุข.....

ปีการศึกษา..... 2551.....

ลายมือชื่อนิติ.....

ลายมือชื่อ อ.ที่ปรึกษาวิทยานิพนธ์หลัก.....

5185674529: MAJOR HEALTH ECONOMICS

KEYWORDS: COST ANALYSIS/DISABILITY/ALCOHOL/DRUNK
DRIVING/TRAFFIC ACCIDENT / BANGKOK

PICHAPONG POKAPUN : COST ANALYSIS OF THE
DISABILITY VICTIMS BY ALCOHOL DRUNK DRIVING
FROM TRAFFIC ACCIDENT: A CASE STUDY IN BANGKOK.
ADVISOR: ASSOC. PROF. PONGSA PORNCHAIWISESKUL,
Ph.D., 183 pp.

The aim of this study would like to analyze the total cost which affect to the household costs of disability victims and their relatives by alcohol drunk driving from traffic accident in Bangkok in first year of treatment (in term of patient's and their relatives point of view).

This descriptive cross sectional study collect the data by using secondary data by questionnaires, select the sample from Don't Drive Drunk foundation members by 95 samples. The cost of disability victims by drunk driving from traffic accident can be divided into patient cost and patient's relative cost and both have direct and indirect for calculation by cost analysis. Costs was separately in each diagnosis related group and summaries again for the result as total cost per one person in first year after patient accident (total of all 25 cost components).

The result of this study found that the cost of the disability victims by alcohol drunk driving from traffic accident in Bangkok in first year after patient's accident(only patient's cost)are 603,235.52 Baht/person in first year after patient's accident ,The cost of the disability victims's relatives by alcohol drunk driving from traffic accident in Bangkok in first year after patient's accident are 612,682.54 Baht/person in first year after patient's accident and Total Cost of the disability victims by alcohol drunk drivers from traffic accident : A case study in Bangkok from the result of this study by summarizes of all cost components is 1,215,918.06 Baht/person in 1st year of patient's accident.

According to the result of regression analysis in the study. It may explain the factors that affecting to the total cost of disability victims by drunk driving from traffic accident : A case study in Bangkok which make the cost become higher or lower depends on 2 significant variables ,there're Patient's income before accident per person per month ,Relative's income before patient's accident per person per month.

This study provides more about the basic information of disability victims by drunk driving from traffic accident for people who are interested in also to the administration of government sectors in order to plan and control the budget or launch policy and specify the proper policy to help and support the disability victims by drunk driving from traffic accident more patient.

Field of Study : Health Economics

Student's Signature

Academic Year : 2008

Advisor's Signature

ACKNOWLEDGEMENTS

The success of this master thesis could not be possible happened without the afford from my thesis advisor, Assoc prof. Pongsa Pornchaiwiseskul Ph.D. for giving me a lot of valuable advices and comments towards all of my thesis process.

I'd like to gratitude to all of my thesis committees with sincerely thank you to thesis chairman, Asst. Prof. Worawet Suwanrada, Ph.D., Thesis examiner, Assoc. Prof. Paitoon Kraipornsak, Ph.D. and thesis external examiner Assoc. Prof. Narathip Chutiwongse for their continued advices and encouragements.

I cannot over my emphasize my sincere thanks to Khun Surasit Sinlapangam, the manager of Don't Drive Drunk foundation for the helpful information and the necessary for the knowledge about the disability victims by drunk driving and also useful data for the Don't Drive Drunk member's contacts during data collection process.

Thank you to all of Disability victims by drunk driving from traffic accident and all members of Don't Drive Drunk foundation for your useful data with kind cooperation and I am appreciated your willingness to spend valuable time to do the questionnaires as the interviewees until this thesis has been finished. I hope that the result of my research in this paper might be helpful and necessary for any victims and relatives of Disability victims by drunk driving from traffic accident as much as possible.

I'd like to gratitude all Ajarns from Health Economics program, Chulalongkorn University with respect to all of good knowledge and education experiences both of academic and life that I've received from you. I also express my sincere thanks to Mrs. Kingthong Kongkanoi, staff of Health economics program for all of your helps during my study.

Lastly, I'd like to acknowledge my parents, my classmates and all of my family and friends. Without their support for everything to me it would have been impossible for me to finish my study.

CONTENTS

	Page
Abstract (Thai).....	iv
Abstract (English)	v
Acknowledgements.....	vi
Contents.....	vii
List of Table.....	viii
List of Figure.....	xiii
Chapter I :Introduction.....	1
• Introduction.....	1
• Research question.....	3
• Research objective.....	4
• Possible benefit.....	4
• Unit of analysis.....	5
• Operation definition.....	5
Chapter II :Literature Review.....	6
• Literature Review.....	6
• Summary of previous literatures review	10
• Definition of alcohol and disability.....	14
Chapter III: Conceptual Framework Research Methodology and Modelling Costs.....	22
• Conceptual framework.....	22
• Research Methodology.....	23
• Modelling Costs.....	27
Chapter IV: Result and discussion.....	63
• Result of general characteristics of data of population study.....	63
• Result of cost components of disability victims by alcohol drunk driving from traffic accident.....	77
• Result of cost components of disability victim's relatives by alcohol drunk driving from traffic accident.....	101
• Discussion.....	140
Chapter V: Conclusion.....	146
• Conclusion.....	146
• Limitation.....	149
• Suggestion for the further study.....	150
References.....	151
Appendices.....	154
• Appendix A.....	155
• Appendix B.....	162
• Appendix C.....	164
Biography.....	183

LIST OF TABLES

Table		Page
2.1	Previous literatures review The duration of study, Level of data and Type of cost/loss that the researchers are interested to study about "The economic loss due to road traffic accident".....	10
2.2	Previous literatures review The duration of study, Level of data and Type of cost/loss that the researchers are interested to study about "The economic loss due to road traffic accident" (Continue)	11
2.3	The summary of literatures about affect to the household costs of traffic accident patients.....	12
2.4	The summary of literatures about affect to the household costs of traffic accident patients (Continue).....	13
2.5	The summary of literatures related to the loss of income of the disability, the injuries and the patient's relative from road traffic accident patients.....	14
2.6	Standard BAC limits.....	16
2.7	Standard BAC limits (continue)	17
2.8	Progressive effects of alcohol.....	18
2.9	Unit of Blood Alcohol Concentration (BAC).....	18
2.10	The punishment for drunk driver in sample countries.....	19
3.1	Summary of the modelling cost in "Cost of the disability victims by alcohol drunk drivers from traffic accident: A case study in Bangkok".....	27
3.2	Taxi fare table.....	33
4.1	Gender of patient.....	63
4.2	Distribution of patient by age group.....	63
4.3	Marital status of patient.....	63
4.4	Education level of patient.....	64
4.5	Career of disability victims (nowadays).....	64
4.6	Distribution of income per month of patient before patient's accident.....	65
4.7	Distribution of income per month of patient after patient's accident..	65
4.8	Cause of become a disability victims.....	66
4.9	Compensation that the patient received after an accident.....	67
4.10	Payment methods that patient used when access to receive a medical treatment in a hospital.....	67
4.11	Distribution of medical equipment classified by type.....	68
4.12	Level of severity of patient.....	69
4.13	Type of vehicle that patient used for transportation and got accident.	69
4.14	Place of accident (Province) of disability patient.....	70
4.15	Sources of fund that patient use to support medical treatment of themselves	71

Table	Page	
4.16	Gender of patient's relative.....	72
4.17	Distribution of patient's relative by age group (nowadays).....	72
4.18	Marital status of patient's relative.....	72
4.19	Education level of patient's relative.....	73
4.20	Career of disability victims (at the year of patient's accident).....	73
4.21	Average monthly income of disability victims of patient's relative (Before accident).....	74
4.22	Average monthly income of disability victims of patient's relative (After accident).....	74
4.23	Average monthly income of disability victims of patient's relative (Nowadays).....	75
4.24	Source of fund that patient's relative use to support medical treatment of patient in first year after patient's accident.....	75
4.25	Medical equipment cost average only per person who pay in 1 st year after patient's accident (Baht).....	77
4.26	Medical equipment cost average per person in 1 st year after patient's accident (Baht).....	78
4.27	Supplement food cost average only per person who pay in 1 st year after patient's accident (Baht).....	79
4.28	Supplement food cost average per person in 1 st year after patient's accident (Baht).....	80
4.29	Home nursing cost average only per person who pay in 1 st year after patient's accident (Baht).....	81
4.30	Home nursing cost average per person in 1 st year after patient's accident (Baht).....	82
4.31	Doctor cost and drug cost average only per person who pay in 1 st year after patient's accident (Baht).....	83
4.32	Doctor cost and drug cost average per person in 1 st year after patient's accident (Baht).....	84
4.33	Travelling Cost (pay for transportation) of patient average only per person who pay in 1 st year after patient's accident (Baht).....	85
4.34	Cost (pay for transportation) of patient average per person in 1 st year after patient's accident (Baht).....	86
4.35	Electricity and water cost average only per person who pay in 1 st year after patient's accident (Baht).....	87
4.36	Electricity and water cost average per person in 1 st year after patient's accident (Baht).....	88
4.37	Accommodation cost average only per person who pay in 1 st year after patient's accident (Baht).....	89
4.38	Accommodation cost average per person in 1 st year after patient's accident (Baht).....	90
4.38.1	The objective of patient's spending accommodation cost for.....	90
4.39	Total travelling time cost of outpatients and inpatient average only per person who pay in 1 st year after patient's accident (Baht).....	91

Table	Page	
4.40	Total travelling time cost of outpatients and inpatient average per person in 1 st year after patient's accident (Baht).....	92
4.41	Waiting time cost of outpatient average only per person who pay in 1 st year after patient's accident (Baht).....	93
4.42	Waiting time cost of outpatient average per person in 1 st year after patient's accident (Baht).....	94
4.43	Loss of income due to illness during treatment in hospital for inpatient average only per person who pay in 1 st year after patient's accident (Baht).....	95
4.44	Loss of income due to illness during treatment in hospital for inpatient average per person in 1 st year after patient's accident (Baht).....	96
4.45	Loss of income due to illness of outpatient average only per person who pay in 1 st year after patient's accident (Baht).....	97
4.46	Loss of income due to illness of outpatient average per person in 1 st year after patient's accident (Baht).....	98
4.47	Other cost of patient average only per person who pay in 1 st year after patient's accident (Baht).....	99
4.48	Other cost of patient average per person in 1 st year after patient's accident (Baht).....	100
4.49	Medical equipments cost (Relative pay for patient) average only per person who pay in 1 st year after patient's accident (Baht).....	101
4.50	Medical equipments cost (Relative pay for patient) average per person in 1 st year after patient's accident (Baht).....	102
4.51	Supplement food cost patient's relative paid (for patient) average only per person who pay in 1 st year after patient's accident (Baht)....	103
4.52	Supplement food cost patient's relative paid (for patient) average per person in 1 st year after patient's accident (Baht).....	104
4.53	Home nursing cost (Relative pay for patient) average only per person who pay in 1 st year after patient's accident (Baht).....	105
4.54	Home nursing cost (Relative pay for patient) average per person in 1 st year after patient's accident (Baht).....	106
4.55	Doctor cost and drug cost (Relative pay for patient) average only per person who pay in 1 st year after patient's accident (Baht).....	107
4.56	Doctor cost and drug cost (Relative pay for patient) average per person in 1 st year after patient's accident (Baht).....	108
4.57	Travelling Cost (Relative pay for transportation for patient) average only per person who pay in 1 st year after patient's accident (Baht)....	109
4.58	Travelling Cost (Relative pay for transportation for patient) average per person in 1 st year after patient's accident (Baht).....	110
4.59	Travelling cost of relative pay for transportation visit IP during admit in hospital average only per person who pay in 1 st year after patient's accident (Baht).....	111

Table	Page	
4.60	Travelling cost of relative pay for transportation visit IP during admit in hospital average per person in 1 st year after patient's accident (Baht).....	112
4.61	Electricity and water cost (Relative pay for patient) average only per person who pay in 1 st year after patient's accident (Baht).....	113
4.62	Electricity and water cost (Relative pay for patient) average per person in 1 st year after patient's accident (Baht).....	114
4.63	Accommodation (Relative pay for patient) average only per person who pay in 1 st year after patient's accident (Baht).....	115
4.64	Accommodation (Relative pay for patient) average per person in 1 st year after patient's accident (Baht).....	116
4.64.1	The objective of patient's relative spending accommodation cost for.....	116
4.65	Total travelling time cost of outpatient's relative average only per person who pay in 1 st year after patient's accident (Baht).	117
4.66	Total travelling time cost of outpatient's relative average per person in 1 st year after patient's accident (Baht).....	118
4.67	Travelling time cost of inpatient's relatives average only per person who pay in 1 st year after patient's accident (Baht).....	119
4.68	Travelling time cost of inpatient's relatives average per person in 1 st year after patient's accident (Baht).....	120
4.69	Total waiting time cost of outpatient's relative average only per person who pay in 1 st year after patient's accident (Baht).....	121
4.70	Total waiting time cost of outpatient's relative average per person in 1 st year after patient's accident (Baht).....	122
4.71	Loss of relative's income due to leaving the job to take care the patient average only per person who pay in 1 st year after patient's accident (Baht).....	123
4.72	Loss of relative's income due to leaving the job to take care the patient average per person in 1 st year after patient's accident (Baht)..	124
4.73	Other costs of patient's relative average only per person who pay in 1 st year after patient's accident (Baht).....	125
4.74	Other costs of patient's relative average per person in 1 st year after patient's accident (Baht).....	126
4.75	Cost of the disability victims by alcohol drunk driving from traffic accident: A case study in Bangkok(All of cost components).....	127
4.76	Cost of the disability victims by alcohol drunk driving from traffic accident: A case study in Bangkok (Only patient cost).....	128
4.77	Cost of the disability victims by alcohol drunk driving from traffic accident: A case study in Bangkok (Only patient's relative cost).....	129
4.78	Total cost of the disability victims by alcohol drunk driving from traffic accident: A case study in Bangkok; classified by type of patient and patient's relative.....	130
4.79	Cost of the disability victims by alcohol drunk driving from traffic accident : A case study in Bangkok (classified only direct costs).....	131

Table	Page
4.80	Cost of the disability victims by alcohol drunk deriving from traffic accident: A case study in Bangkok (classified only indirect costs)... 131
4.81	Cost of the disability victims by alcohol drunk deriving from traffic accident : A case study in Bangkok (classified by direct and indirect cost) 132
4.82	Other cost of the disability victims by alcohol drunk driving from traffic accident: A case study in Bangkok (classified by patient's other cost and relative other cost)..... 133
4.83	Cost of the disability victims by alcohol drunk driving from traffic Accident: A case study in Bangkok (classified only medical costs)... 134
4.84	Cost of the disability victims by alcohol drunk driving from traffic accident: A case study in Bangkok (classified only non medical costs)..... 134
4.85	Cost of the disability victims by alcohol drunk driving from traffic accident: A case study in Bangkok (classified by medical and non medical costs)..... 135
4.86	Cost of the disability victims by alcohol drunk driving from traffic accident: A case study in Bangkok. (Top 5 of the highest cost components)..... 136
4.87	Cost of the disability victims by alcohol drunk driving from traffic accident; A case study in Bangkok (summary only patient cost with its statistic)..... 137
4.88	Cost of the disability victims by alcohol drunk driving from traffic accident; A case study in Bangkok (summary only patient's relative cost with its statistic)..... 138
4.89	Cost of the disability victims by alcohol drunk driving from traffic accident: A case study in Bangkok: All of cost components both patient cost and relative cost and estimation for cost in Bangkok and Thailand..... 139
4.90	OLS regression result..... 141

LIST OF FIGURES

Figure		Page
3.1	Conceptual Framework.....	22
4.1	Cause of become a disability victims (percentage)	66
4.2	Sources of fund that patient use to support medical treatment of themselves	71
4.3	Source of fund that patient's relative use to support medical treatment of patient in first year after patient's accident (reported by percentage).....	76
4.4	Total cost of the disability victims by alcohol drunk driving from traffic accident : A case study in Bangkok; classified by type of patient and patient's relative.....	130
4.5	Cost of the disability victims by alcohol drunk driving from traffic accident : A case study in Bangkok: classified by direct and indirect cost (per 1 person in 1 st year after patient's accident).....	132
4.6	Other cost of the disability victims by alcohol drunk driving from traffic accident : A case study in Bangkok: classified by patient's other cost and relative other cost (Baht, %)......	133
4.7	Cost of the disability victims by alcohol drunk driving from traffic accident : A case study in Bangkok (classified only non medical costs).....	135