NUTRITION TRAINING: AN INTERVENTION TO INCREASE THE KNOWLEDGE AND PRACTICE OF FEMALE COMMUNITY HEALTH VOLUNTEER REGARDING THE PREVENTION OF IRON DEFICINCY ANEMIA DURING PREGNANCY IN NAWALPARASI DISTRICT NEPAL

Nira Pandey

A Thesis Submitted in Partial Fulfillment of the Requirements
for the Degree of Masters of Public Health
Health Systems Development Programme
College of Public Health
Chulalongkorn University
Academic Year 1998
ISBN: 974-331-307-9

© College of Public Health, Chulalongkorn University

Bangkok, Thailand

Thesis Tittle Nutrition Training: An Intervention to increase the Knowledge and Practice of Female Community Health Volunteer Regarding the Prevention of Iron Deficiency Anemia During Pregnancy in Nawalparasi District, Nepal : Nira Pandey By Programmer : Master of Public Health (Health Systems Development) College of Public Health. Thesis Advisor Sathirakorn Pongpanich, M.A., Ph.D. Accepted by the College of Public Health, Chulalongkorn University in Partial Fulfillment of the Requirements for the Master's Degree. Bhit Little -amon Dean of the College of Public Health (Prof Chitr Sitthi-armon, M.D., Ph.D.) THESIS COMMITTEE Wattana P. Janjarol Chairperson (Assoc. Professor Wattana S. Yanjaroen, Ph.D.) Thesis Advisor (Sathirakorn Pongpanich, M.A., Ph.D.)

(Assist. Professor Alisara Chuchat, Ph.D)

ABSTRACT

Maternal mortality in Nepal is very high totalling 539/100,000 live births. The main causes of high maternal mortality are hemorrhage, toxemia. sepsis, obstructed labor and abortion. Iron deficiency anemia (IDA) which is a common and widespread nutritional problem in Nepal is one of the factors contributing to the high maternal mortality rate. IDA can be reduced by high or increased consumption of iron rich and iron absorbent food by the pregnant women.

The main issue of this research is how to increase the consumption of locally available iron rich and iron absorbent foods in Nawalparasi district of Nepal. In developing countries this can only be achieved through the primary health care (PHC) approach. Community health workers, especially FCHV, are the backbone of this program. So appropriate training regarding the prevention of IDA and community participation and effective supervision of FCHV will be helpful in increasing the consumption of locally available iron rich and iron absorbent food in Nepal.

There is a great need to train FCHV in Nepal because there is a severe lack of trained health manpower in the central and at peripheral institutions. So the FCHV program was developed and introduced during 1989-1990 in order to expand the coverage of basic primary health care services in the country. Their most important responsibility is to promote community involvement in the primary health center program.

This study proposes a 3 days training program for FCHV on nutrition education regarding the prevention of IDA among pregnant women. Training will be carried out in the Dumkibas health post of Nawalparasi district, Nepal in January 2000 with the help of the Regional Training Center and District Health office in Nawalparasi.

After the training, FCHV will provide nutrition education to the community in Nawalparasi district. Evaluation will be carried after one year of implementation of the program. The methods of data collection will be focus group discussion and survey questionnaire.

ACKNOWLEDGEMENT

I would like to express my profound appreciation to the Dean, Professor Chitr Sitthi-armon for his creative guidance and encouragement throughout the period of this MPH study. I would also like to express my sincere regards to Associate Dean, Associate Professor Dr. Wattana S. Jangaroen for her support in my study.

I would also like to express my heartful gratitude and appreciation to my advisor Dr. Sathirakorn Pongapanich for his kind attention, encouragement, valuable advise, guidance and suggestions on the whole process of my thesis writing. I have been very much impressed with him and am very grateful.

I am very grateful to Dr. Stephan King and Dr. Nantavarn Vichit- Vadakarn for their valuable advise, encouragement and comments on the process of my thesis writing.

I would like to express my deepest gratitude to Ajarn Ratana, Somrongthong, Ajarn Chanawang Burapart and Ajarn Wacharin Tanyanont for their courageous, continuous support and assistance through out the whole year of my study period.

I am very grateful to Ajarn Tanawat Likitkererat for all the computer skills he has taught me. I would like to extend my thanks to all the staff of this college of Public Health for their kind cooperation through out my study period.

I would like to express deepest gratitude to Proffesor Dr. Indira Sing Institute of Medicine and Dr. P. T. Jayawickramrajah, WHO for providing me this opportunity to study in MPH in Thailand.

I would like to extend my thanks to all my friends of Public Health for their suggestions throughout my study period.

I want to express my especial thanks to Miss Sunata Wongchatee and Miss King Keaw Keawkunroung for their inevitable cooperation and help from the information center.

Finally, my greatest thanks are to my family, especially for my husband Thaman Pandey to his patience, encouragement and constant support. Without his continual and dedicated assistance this study would not have been possible.

LIST OF CONTENTS

	Page
ABSRACT	III
ACKNOWLEDGEMENT	IV
LIST OF CONTENTS	V
LIST OF TABLE AND FIGURES	X
ACRONYMS AND ABBREVIATION	XI
CHAPTER I 1. Introduction	1
CHAPTER II: ESSAY	
2.1. Introduction	6
2.2. Iron Requirement During Pregnancy	11
2.3. Diet During Pregnancy	11
2.4. Consequences of Iron Deficiency Anemia	13
2.4.1. Maternal Mortality	13
2.4.2. Fetal Growth Retardation, Prenatal and Perinatal mortality	14
2.4.3. Low Resistance to Infection	15
2.5. Analyzing Proced-Proceed Model	15
2.5.1. Predisposing Factors	19
2.5.1.1. Knowledge	19
2.5.1.2. Poverty	22
2.5.1.3. Early Marriage	24
2.5.1.4. Food Taboo and Beliefs	26

	2.5.1.5. Gender Discrimination	28
	2.5.1.6. Low Status of Women	30
	2.5.2. Enabling Factors	31
	2.5.2.1. Availability of services	32
	2.5.2.2. Accessibility of Health Services	33
	2.5.2.3. Affordability of Service	35
	2.5.3. Reinforcing Factors	36
	2.5.3.1. Mass Media	37
	2.5.3.2. Peers Group	37
	2.5.4. Non- Behavioral cause	37
	2.5.4.1. Hookworm	37
	5.5.4.2 Malaria	38
	2.5.5. Behavioral Factors	39
	2.5.5.1 Iron Rich Foods	39
	2.5.5.2. Types of Dietary Iron	39
	2.5.5.3 Iron Absorbent Foodsbent Foods	40
	2.5.5,4. Iron Inhibiting Foods	41
2.6.	Possible Strategies To Reduce Iron Deficiency Anemia	42
	2.6.1. Iron Supplementation	42
	2.6.2. Increase Compliance to oral supplementation	43
	2.6.3. Malaria control	- 44

2.6.4. Control of other parasitic infections	45
2.6.5. Adequately train antenatal staff	45
2.7. Role of the FCHV related with the family	46
2.8. Intervention: Nutrition Education	46
2.9. Female Community Health Volunteer Program	48
2.10 Conclusion	49
References	51
CHAPTER III: PROPOSAL	
3.1. Background Introduction	55
3.2. Rationale of the study	56
3.3. Problem statement	60
3.4. Site of study	62
3.5 Purpose of the study	63
3.6 Goal of the project	63
3.6.1. Objectives of the study	63
3.7. Research Question	64
3.8. Proposed Program	64
3.9. Training Program for FCHV	65
3.10 Implementation of the program	69
3.11 Health Education practice of FCHV	7 0
3.12. Supervision and monitoring activities	71

3.13. Evaluation of the training	72
3.13.1. Training process evaluation	72
3.13.2. Learning outcome evaluation	73
3.13.3. Behavioral change evaluation	73
3.14. Activities Plan with time table	76
3.15. Budget of the study	77
3.16. Ethical issue	77
3.17. Limitation of the study	78
References	79
CHAPTER IV: DATA EXERCISE	
4.1, Introduction	81
4.2. Objectives of the data exercise	83
4.3. Data collection methods	84
4.4. Sampling	84
4.5. Duration	85
4.6. Field activities	86
4.7. Limitations of the data exercise	87
4.8. Findings	87
4.9. Discussions	89
4.10. Conclusions	90
4 11 Lesson learned from FGDs	91

CHAPTER V: PRESENTATION
Presentation93
CHAPTER VI: ANNOTATED BIBLIOGRAPHY
Annotated Bibliographyl00
APPENDICES
Appendix - I: Map of Nepal102
Appendix - 11: Observation Checklist for nutrition education 103
Appendix - III: Training Process Evaluation Questionnaires for FCHV 104
Appendix - IV: FGDs Guidelines for FCHV 105
Appendix - V: Pretest-posttest questionnaire for FCHV 106
Appendix - VI: Training Curriculum for FCHV 110
Curriculum Vitae

LIST OF TABLES AND FIGURES

Table:		
2.1.	Criteria for determining the presence of nutritional anemia8	
3.1.	List of proposed program65	
3.2.	Activities Plan with timetable76	
3.3.	Budget for study 77	
Figures:		

2.1.Precede-Proceed Model (Original)------16

2.1.Conceptual Framework affecting Iron Deficiency Anemia ----- 20

ACRONYMS AND ABBREVIATIONS

ANM = Auxillary Nurse Midwife

DHS = Demographic and Health Survey

FCHV = Female Community Health Volunteer

HMG = His Majesty's Government

IDA = Iron Deficiency Anemia

IMR = Infant Mortality Rate

KAP = Knowledge Attitude and Practice

MMR = Maternal Mortality Rate

MOH = Ministry of Health

NFHS = Nepal Family Health Survey

PHC = Primary Health Center

SMPN = Safe Motherhood Program In Nepal

VDC = Village Development Committee

VHO = Village Health Worker

WHO = World Health Organization