

ETHNOGRAPHY OF INFANT FEEDING IN SUB-SAHARAN AFRICA: CASE
STUDIES IN THE CONTEXT OF HIV/AIDS AND NEWBORN CARE

A Dissertation

Presented to the Faculty of the Graduate School
of Cornell University

In Partial Fulfillment of the Requirements for the Degree of
Doctor of Philosophy

by

Lucy Nduta Thairu

May 2006

© 2006 Lucy Nduta Thairu

ETHNOGRAPHY OF INFANT FEEDING IN SUB-SAHARAN AFRICA: CASE
STUDIES IN THE CONTEXT OF HIV/AIDS AND NEWBORN CARE

Lucy Nduta Thairu, Ph.D.

Cornell University 2006

The three ethnographic case studies described in this dissertation provide a cultural description of breastfeeding behavior with respect to HIV/AIDS and newborn care, and with a focus on early infancy.

Study 1: Influences on infant feeding decisions were investigated in-depth interviews with a sample of 22 HIV-positive mothers from Kwa-Zulu Natal, South Africa. Five themes were identified: social stigma of HIV infection; maternal age and family influences on feeding practices; economic circumstances; beliefs about HIV transmission through breastmilk; and beliefs about the quality of breastmilk compared to formula. Mothers knew that breastmilk can infect the infant with HIV, but a dominant theme was that breastmilk protects children and is superior to formula.

Study 2: Local feeding practices for the newborn, and how these “fit” within the repertoire of newborn care giving practices were assessed in Pemba Island, Tanzania. In-depth interviews were conducted with 13 peri-urban mothers and 30 rural mothers. Beliefs underlying neonatal care-giving practices included: a) fear of maternal and/or newborn death at the time of delivery; b) vulnerability of the newborn; c) ritual pollution after childbirth and d) feeding strategies believed to enhance newborn health and survival. From a pile sort exercise conducted with a literate sub-sample, infant feeding was found to be conceptualized as distinct from

other newborn care giving practices.

Study 3: The 30 rural women from study 2 were provided with advice to improve feeding behavior during pregnancy. Their responses to the advice were assessed postpartum. Breastfeeding newborns was part of cultural expectation and practice, but exclusive breastfeeding was not.

In all three communities, breastfeeding is highly valued and is culturally normative. The first study results offer a glimpse of the forces that influence HIV positive women as they attempt to make an informed choice about feeding their infants. Results from the second study suggest that interventions could specifically target feeding without having to affect other domains of newborn care. Results from the third study offer guidance for designing education messages for promoting exclusive breastfeeding during the first few weeks of infant life. Taken together, the three studies provide useful information for breastfeeding promotion activities.

BIOGRAPHICAL SKETCH

I left Kenya after high school to study Biochemistry in Nantes University in France (1993). Following a year of intensive French language courses at the University, I enrolled as an undergraduate and then as a Master's student in the department of Biochemistry. For my Master's thesis (1998), I reviewed the literature on the biochemical basis of protein-energy malnutrition in children. During this experience, my profound interest in child nutrition in the developing nations emerged, and has continued to intensify.

After enrolling in the International Nutrition Program at Cornell University in the United States (Fall 1999), I envisioned how I might focus my growing interest in the nutritional aspects of HIV/AIDS. Because of my own personal commitment to children's well-being, the nutritional context of Mother-To-Child Transmission of HIV was a natural choice. For my Masters' thesis research at Cornell University (Summer 2000), I chose to explore the cultural acceptability of infant feeding alternatives among women of unknown HIV status drawn from one community in the Central Province of Kenya.

My brief research project revealed that many questions relative to HIV/AIDS and infant feeding remain unanswered. I wanted to build on the material in the interviews to better understand these complexities, and to be able to contribute to efforts to prevent Mother-To-Child Transmission of HIV through breastfeeding. The first study presented in this dissertation was largely inspired by the Kenya research. In the study, I interviewed a small sample of HIV positive women in South Africa about their infant feeding practices.

During the South Africa project, I found that the complexities and the difficulties faced by HIV-positive women may not be applicable to mothers who were

not HIV infected. For this reason, my subsequent research focused on feeding during the first few weeks of infant life. I designed the second and the third studies in Pemba Island, Tanzania, which has among the lowest rates of HIV infection in Africa, but which experiences one of the world's high rates of neonatal mortality.

I continue to enjoy working on infant feeding issues in sub-Saharan Africa, and I am especially pleased with the results of the three ethnographic studies. I hope that you will learn as much from this dissertation as I did from writing and editing it.

To mom
For your love and support

ACKNOWLEDGMENTS

I would like to express my sincere gratitude to the people who have provided much needed support and assistance during my time in graduate school, and especially while writing this dissertation. Special thanks to my mother, Millicah Wambui, for her love, support and constant encouragement. I also thank my sister, Florence Keni, for being a wonderful friend, as well as for her honesty with me as I continue to grow as a person. I am particularly grateful to my partner, Kay Giesecke, for his insightful comments on the dissertation and for supporting my work.

Special thanks also to my dissertation advisor, Dr. Gretel Pelto, for her time and wise counsel as a mentor, and also for guidance in analyzing, compiling and editing the dissertation. I am deeply indebted to my special committee members, Michael Latham, Patricia Cassano and Rebecca Stoltzfus for feedback and invaluable insights on my ideas as they developed. The dissertation has benefited a lot from their thorough review.

Acknowledgement is also due to my friends. Emily Levitt, for reading and critiquing chapters 1 to 4. Kate Dickin, for comments and suggestions on the TIPS methodology and on chapter 8. Sera Young, whose insightful comments on chapter 6 are highly appreciated. Thanks also to other friends at Cornell who provided much-needed support and encouragement along the way.

TABLE OF CONTENTS

I. INTRODUCTION	1
Dissertation outline	4
II. BREASTFEEDING AND CHILD HEALTH AND SURVIVAL: A SOCIAL PERSPECTIVE	7
1. Defining infant feeding terms	7
2. Importance of appropriate infant feeding practices	9
a. Importance of appropriate infant feeding practices for infant health and survival	12
b. Importance of appropriate infant feeding practices for mothers, families and society	12
c. Breastfeeding: best practices	13
d. Infant feeding options in situations where breastfeeding is not be beneficial	15
3. Current Patterns of infant feeding in sub-Saharan Africa	16
a. Feeding prelacteals	17
b. Giving breast milk substitutes to infants before they are six months of age	18
c. Feeding infants during episodes of illness	19
4. A conceptual framework linking infant feeding behavior to the broader social, economic and political context	20
1. Individual level	22
2. Interpersonal level	24
3. The home, the health care setting and the work place	26
4. Legal, political, economic and religious aspects of society	27
5. Summary	28
5. Conclusion	29
III. INFANT FEEDING IN SPECIAL CIRCUMSTANCES IN SUB-SAHARAN AFRICA: HIV AND CARE OF THE NEWBORN	30
Part I. Infant feeding and Mother-to-child transmission of HIV (MTCT)	31
1. Infant feeding options for mothers with HIV: the dilemma	31
2. Biological and behavioral determinants of MTCT through breastmilk	32
3. Infant feeding options for HIV infected mothers	33
4. Best practices for the preparation of other milks for infant consumption	50
5. Mothers' rights to fully informed and free choice of infant feeding method and challenges for the informed approach	51
Part 2. Infant feeding within the context of newborn care	54
1. Importance of the problem of neonatal mortality	54
2. Potential impact of appropriate infant feeding practices on neonatal mortality	56
3. Determinants of neonatal mortality	56

4. Principles of good neonatal care	64
5. Interventions to lower neonatal mortality	68
Conclusion	74
IV. METHODOLOGICAL APPROACHES	75
A) The ethnographic approach	75
1) Key features of the ethnographic approach	76
2) Ethnographic methods and techniques	78
a) Participant observation	78
b) Key informant interviewing	80
c) Free listing	81
d) Pile sorting	81
e) Structured ethnographic interviews and surveys	84
3) Analysis of ethnographic data	85
a) Analysis of text data using content analysis and thematic analysis	86
b) Developing “codes” and “themes” using the grounded approach	88
c) Analysis of pile-sort data using multi-dimensional scaling	89
4) The use of ethnographic research in nutrition and public health	94
5) Validity (interpretation, representation and generalizability of ethnographic studies)	96
1. Researcher as an interpreter	96
2. The problem of “exotic selectivity”	98
B) The “Trial of Improved Practices” (TIPS) approach	99
1) Description of the TIPS approach	99
2) Evaluating the standard TIPS protocol as a research tool	102
a) Lack of specification of its theoretical basis	103
b) Lack of clear guidelines on how to analyze the data obtained	105
c) Number of sites	106
d) Logistics of the TIPS	106
C) Conclusion	107
V. SOCIAL CULTURAL INFLUENCES ON INFANT FEEDING DECISIONS AMONG HIV-INFECTED WOMEN IN RURAL KWA-ZULU NATAL, SOUTH AFRICA	108
A) Objectives of the study	108
B) Research setting	109
C) Structure of the Africa Center project	111
1) Counseling, testing for HIV, and administration of anti-retroviral drugs	112
2) Infant feeding counseling	114
D) Methods	115
1) Interview procedures	115
2) Data analysis	117
E) Results	117
Sample characteristics	118
Theme 1: HIV	118
Theme 2: Infant feeding and fear of HIV transmission through breastmilk	125

Theme 3: Perceived quality of breastmilk in comparison to infant formula	127
Theme 4: Formal employment and the role of economic circumstances in infant feeding decision-making	128
Theme 5: Age and family influences on feeding practices	130
F) Discussion	131
Conclusion	135
VI. ROUTINE CARE OF THE NEWBORN IN PEMBAN HOUSEHOLDS: THE THEMATIC STUDY	137
Background	137
Objectives of this study	137
Research setting	138
1) History	139
2) Culture	140
3) Education	141
4) Employment and economic activities	142
5) Food and nutrition	144
6) Key features of Pemban households	145
7) Health care and health seeking in Pemba	147
8) Description of the two Pemban sites (rural and peri-urban) in which the study was conducted	149
Research methods for this study	155
1) Data collection	156
2) Selection of the two samples	157
3) Interview procedures	159
4) Data analysis	160
Results	160
Characteristics of the participants	161
Theme 1: Fear of death during delivery	162
Theme 2: Perceived vulnerability of the newborn and its implications for parenting	164
Theme 3: Ritual pollution and postpartum seclusion	173
Theme 4: Infant feeding beliefs and practices	174
Discussion	182
a) Results from both samples in relation to beliefs about breastmilk substitutes	182
b) Interpreting beliefs and practices related to newborn care in relation to current biomedical knowledge	183
Conclusion	190
VII. ROUTINE CARE OF THE NEWBORN IN PEMBAN HOUSEHOLDS: THE PILE SORT ANALYSIS	192
Objective	192
Methods	192
1) Site and sample selection	192
2) Data collection	192

3) Data analysis	194
Results	196
Sample demographic characteristics	196
Results of MDS scaling of newborn care practice pile sorting: peri-urban women	196
Results of MDS scaling of newborn care practice pile sorting: Rural women	261
Results obtained from merging the two samples	263
Results obtained from selecting women who had a good correlation	264
Discussion	260
Methodological approaches	266
Limitations of the study	270
Conclusion	270
VIII. FEEDING THE NEWBORN ON THE PEMBA ISLAND OF TANZANIA: WOMEN'S BELIEFS, PRACTICES AND RESPONSES TO RECOMMENDATIONS	212
Objectives of the study	212
Methods	212
Sample selection	212
Interview procedures	213
Developing the messages	214
Obtaining measure of exclusive breastfeeding	216
Interviewer training	217
Data analysis	219
Results	219
Characteristics of the sample	220
Beliefs about breastmilk and breastfeeding and feeding intentions prior to delivery	222
Exposure to the recommendations	225
Feeding practices reported by mothers after delivery	231
Experiences with Recommendations	232
Variability in response to the recommendations not to give the baby any water to drink and not to give the baby any foods or liquids apart from breastmilk	234
Traumatic experiences encountered by four of the mothers in the sample during and after delivery	237
Discussion	239
Methodological approach	239
Research findings	241
Conclusion	243
IX. IMPLICATIONS OF THE THREE CASE STUDIES FOR INTERVENTIONS TO IMPROVE EARLY INFANT FEEDING	245
Comparisons of the site and the samples	246
Site characteristics: Social, political and economic commonalities and differences	246

Characteristics of women in the three samples and their implications for generalizing the results	247
Methodological approaches	250
Analysis of the findings in relation to the socio-ecological model	252
1. Individual level	253
2. Interpersonal level	254
3. Settings in which the individual operates	256
4 Legal, political, economic and religious aspects of society	259
Lessons learned and applications to improve infant feeding practices	261
X. APPENDICES	266
Appendix 5.1: Items written on index cards, and respective questions	266
Appendix 6.1a: List of 34 newborn caregiving practices written on index cards (English)	267
Appendix 6.1b: List of 34 newborn caregiving practices written on index cards (Kiswahili)	267
Appendix 6.2a: List of 34 newborn caregiving practices written on index cards, and respective questions used to interview peri-urban Pemban women	268
Appendix 6.2b: List of 34 newborn caregiving practices written on index cards, and respective questions used to interview peri-urban Pemban women	271
Appendix 6.3a: List of 16 food items commonly fed to newborns in Pemba, and the respective questions used to interview rural Pemban women (English)	273
Appendix 6.3b: List of 16 food items commonly fed to newborns in Pemba, and the respective questions used to interview rural Pemban women (Kiswahili)	275
Appendix 7.1a: Instructions for the pile sorting exercise used for literate mothers only, peri-urban and rural Pemban samples (English)	277
Appendix 7.1b: Instructions for the pile sorting exercise used for literate mothers only, peri-urban and rural Pemban samples (Kiswahili)	278
Appendix 8.1a: Interview 1 (English)	279
Appendix 8.1b: Interview 1 (Kiswahili)	283
Appendix 8.2a: Interview 2 (English)	287
Appendix 8.2b: Interview 2 (Kiswahili)	291
Appendix 8.3a: Interview 3 (English)	294
Appendix 8.3b: Interview 3 (Kiswahili)	303
XI. REFERENCES	312

LIST OF FIGURES

Figure 2.1 Ecological framework and broad categorization of factors influencing infant behavior	22
Figure 3.1 MDS plot recreated from the distances in table 3.1 Stress in two dimensions: 0.00081	91
Figure 5.1 Map indicating Hlabisa district	111
Figure 6.1 Map of the two Zanzibar islands (Pemba and Unguja)	198
Figure 7.1 MDS plot of judged similarities among common newborn care-giving behaviors for the peri-urban women (stress in 2 dimensions=0.243). Note that one grouping of behaviors is located at the upper left extremity of the first dimension. Other behaviors form an arc spanning the right hand side of the second dimension	201
Figure 7.2 Clusters identified through MDS scaling of the peri-urban women's sorting of the 34 newborn care behaviors	202
Figure 7.3 MDS plot of judged similarities among common newborn care-giving behaviors for the rural women (stress in 2 dimensions=0.240). Note that one grouping of behaviors is located at the lower left extremity of the first dimension	203
Figure 7.4 Clusters identified through MDS scaling of the rural women's sorting of the 34 newborn care behaviors	204
Figure 7.5 Clusters identified through MDS scaling of the pooled sample's sorting of the 34 newborn care behavior	205
Figure 7.6 MDS plot of judged similarities among common newborn care-giving behaviors for the rural and peri-urban women whose correlation with the model was 0.5 and above (stress in 2 dimensions=0.240). Note that one grouping of behaviors is located at the lower left extremity of the first dimension	222
Figure 8.1 Number of women who participated in each of the three interviews	205

LIST OF TABLES

Table 2.1: WHO/UNICEF/UNAIDS definitions of infant feeding terms (Source: UNAIDS/UNICEF/WHO, 1998)	8
Table 3.1 Set of distances among 5 American cities	90
Table 3.2: Kruskall's informal guidelines for interpreting the stress	93
Table 5.1: Characteristics of the full study cohort (as of June, 2002) and the ethnographic study sample	118
Table 5.2: Mothers' beliefs about HIV and about the modes of transmission	119
Table 5.3: Mothers' beliefs about HIV prevention	119
Table 5.4: Women's perceptions about the mode of infant feeding promoted in local hospitals	123
Table 5.5: Age and disclosure of HIV status to the interviewer	124
Table 5.6: Women's beliefs about the use of infant formula	128
Table 5.7: Women's employment status relation to infant feeding	130
Table 5.8: Age and infant feeding decision	131
Table 6.1: Sample demographic characteristics	162
Table 6.2: Mothers' perceptions about the constraints and motivations for delivering at the hospital versus the home	164
Table 6.3. Beliefs and motivations for washing a baby with traditional medicine	169
Table 6.4: Beliefs and motivations for massaging a baby with traditional medicine	170
Table 6.5: Mothers' beliefs and motivations for exposing newborns who are ill to smoke	172
Table 6.6: Mothers' beliefs and motivations for applying soot on the baby's face, palms and under his feet	172
Table 6.7: Mothers' beliefs and motivations about shaving part of the baby's hair and applying medication on it	173

Table 6.8: Mothers beliefs about breastmilk and breastfeeding	175
Table 6.9: Beliefs about giving newborns water to drink	177
Table 6.9: Beliefs about giving newborns fluids to drink	178
Table 6.10: Beliefs about giving newborns solids and folk fluids	180
Table 6.11: Respondents' beliefs about spoon and bottle feeding newborns	182
Table 7.1: Sample demographic characteristics	196
Table 7.2: Stresses obtained from the Multi-Dimensional Scalings for the peri-urban sample	197
Table 7.3: Number of clusters versus fit, larger numbers indicate better fit	199
Table 7.4 Specific behaviors contained in each of the clusters, membership in a given cluster was determined using hierarchical clustering	200
Table 7.5: Stresses obtained from the multi-dimensional scalings for the rural sample	201
Table 7.6: Stresses obtained from the multi-dimensional scalings of the pooled sample	203
Table 7.7: Stresses obtained from the multi-dimensional scalings for women with correlations $>.5$	205
Table 8.1: Demographic characteristics of the sample (n=30)	221
Table 8.2: Mother's breastfeeding intentions	223
Table 8.3 Breast milk substitutes that mothers intended to give to newborns	224
Table 8.4: Anticipated provider of breastmilk substitute	225
Table 8.5: eligibility for exposure to recommendation	226
Table 8.6: Number of mothers who chose to try each of the recommendations provided	227
Table 8.7 Mothers' motivations for choosing to breastfeed on demand	228
Table 8.8 Mothers' reasons for choosing to initiate breastfeeding within two hours of delivery	229

Table 8.9 Mothers' motivations for choosing not to give their babies any other foods or liquids	230
Table 8.10 Motivations for choosing the recommendation not to give the baby any water to drink	230
Table 8.11 Reasons for not agreeing with the recommendation to forego giving water	231
Table 8.12 Newborn feeding practices in the sample	232
Table 8.13: Reasons for trying the second recommendation	233
Table 8.14 Statements to justify giving the baby water	234
Table 8.15: Explanations for trying the recommendation not to give the baby any water to drink	234
Table 8.16: Age and success in trying out recommendation not to give water	235
Table 9.1 Lessons learned and applications from the three studies in relation to infant feeding in the context of HIV	263
Table 9.2 Lessons learned and applications from the three studies in relation to essential newborn care	264
Table 9.3 Lessons learned and applications from the three studies in relation to infant feeding in general	265

LIST OF ABBREVIATIONS

AIDS: Acquired Immune Deficiency Syndrome

BFHI: Baby Friendly Hospital Initiative

CD4: A type of cell in the immune system that is targeted and killed by HIV. As the number of CD4 cells decreases, an infected person's risk of getting "opportunistic infections" increases

CD8: Also a type of cell in the immune system that provides an immunologic defense against HIV by controlling viral replication

FES: Focused Ethnographic Study

HIV: Human Immunodeficiency Virus, the virus that causes AIDS

KZN: Kwa-Zulu Natal

MDS: Multi-Dimensional Scaling

MTCT: Mother-To-Child Transmission of HIV

PBA: Pemba

PMTCT: Prevention of Mother-To-Child Transmission of HIV

RAP: Rapid Assessment Procedures

TBA: Traditional Birth Attendant

TIPS: Trial of Improved Practices

UN: United Nations

UNAIDS: The Joint United Nations Program on HIV/AIDS

UNICEF: United Nations Children's Fund (formerly "United Nations International Children's Emergency Fund")

WHO: World Health Organization