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NUTRITION KNOWLEDGE AND CARE PRACTICES OF HOME-BASED CAREGIVERS IN MAKHADO AND THULAMELA MUNICIPALITIES OF VHEMBE DISTRICT IN LIMPOPO PROVINCE, SOUTH AFRICA

BY

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The dissertation is submitted in the fulfillment of the requirement for the degree Master of Science in Public Nutrition (MSc P. Nut) at the University of Venda, School of Health Sciences, Department of Nutrition.

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DECLARATION BY CANDIDATE

"I, Tirhani Asnath Masia hereby declare that the work on which this dissertation is based, is original (except where acknowledgements indicate otherwise) and that neither the whole work nor any part of it has been or shall be submitted for another degree at the University of Venda or any other institution for tertiary education or examination body".

Tirhani Asnath Masia

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Date



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DEDICATION

The work done on this dissertation is dedicated to:

- The God of Mount Zion who strengthened me throughout my studies.
- The following individuals for their love and support as well as their presence in my life:

My parents Thomas and Emelinah

My sisters Lorraine, Eunice and Octovia

My brothers Timmy and Nyiko

My nephews Tisean and Nkanelo

My niece Mashudu

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ABSTRACT

Background: Home-based care (HBC) is any form of care given to clients in their homes. One of the components of home-based care is to promote and maintain good health, hygiene and nutrition. Nutrition is a major lifestyle factor in health promotion and is important in the prevention and management of chronic diseases. This study was conducted to assess nutrition knowledge and care practices of home-based caregivers in Vhembe District.

Method: Descriptive and exploratory study designs were used with both quantitative and qualitative methods. A total of 128 home-based caregivers were conveniently selected and interviewed from HBC agencies of Makhado and Thulamela Municipalities of Vhembe District. A questionnaire, interview guide and observational checklist were used to collect data. Ninety-two home-based caregivers participated in the focus group discussions. Observations during home visits were made to 28 home-based caregivers. Quantitative data were analysed using SPSS computer software and qualitative data using thematic analysis. Likert scale was developed to assess the level of nutrition knowledge of home-based caregivers and was categorised into limited, satisfactory and adequate knowledge. The significant difference of the socio-demographic variables and level of nutrition knowledge was determined by using Chi-square test.

Results: Almost all study participants (99.2%) were females and 84.3% were aged 30 to 50 years. Over two third (68.7%) of home-based caregivers had secondary education and 18% had tertiary education. More than half (64.1%) had six to ten years of HBC working experience. The results showed that 0.8% of the home-based caregivers had adequate nutrition knowledge while 45.3% had satisfactory nutrition knowledge and 53.9% had limited nutrition knowledge. The findings showed that home-based caregivers were able to translate their nutrition knowledge to their clients. However, they did not share most of the nutrition information they said they knew with their clients. The study showed that nutrition knowledge of home-based caregivers was not influenced by any of the five socio-demographic variables selected.

Conclusion: The findings revealed that the majority of home-based caregivers did not have adequate nutrition knowledge. However, they were able to share with their clients some of the nutrition information based on their knowledge.

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TABLE OF CONTENTS

CHAPTER ONE: INTRODUCTION

1.1 Background information and motivation of the study 1
1.2 Problem statement 2
1.3 Aim of the study 3
1.4 Objectives of the study 3
1.5 Significance of the study 3
1.6 Assumptions of the study 4
1.7 Structure of dissertation 4

CHAPTER TWO: LITERATURE REVIEW

2.1 Overview 5
2.2 Roles of home-based caregivers 6
2.3 Training and support provided for home-based caregivers 7
2.3.1 Learner handbook for the training of home/community based caregivers 7
2.3.2 South African food based dietary guidelines 8
2.3.3 Support structures for home-based caregivers 9
2.3.4 Duration of training for home-based caregivers 10
2.3.5 Training information received by home-based caregivers 11
2.4 Nutrition knowledge of home-based caregivers 12
2.5 Nutrition care practices of home-based caregivers 13
2.6 Challenges experienced by home-based cares 14
2.7 Summary of literature review 15

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction 17
3.2 Study design 17
3.3 Study population 17
3.3.1 Target population 17
3.3.2 Sample size 18

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3.3.3 Inclusion criteria 21
3.3.4 Exclusion criteria 21
3.3.5 Location of the research 21
3.3.6 Subject recruitment 21
3.4 Instrument development 22
3.4.1 Variables measured 22
3.4.1.1 Nutrition knowledge of home-based caregivers 23
3.4.1.2 Nutrition care practices 23
3.4.1.3 Socio-demographic status 23
3.4.2 Questionnaire 23
3.4.3 Interview guide 24
3.4.4 Observational checklist 24
3.4.5 Pilot study 24
3.4.6 Validity and reliability 25
3.4.6.1 Validity 25
3.4.6.2 Reliability 25
3.5 Data collection procedure 25
3.5.1 Physical arrangements 25
3.5.2 Tools and specific procedures 26
3.5.3 Field workers 26
3.6 Institutional approval 26
3.7 Ethical consideration 27
3.8 Data analysis 27
3.9 Dissemination of information 28

CHAPTER FOUR: RESULTS

4.1 Introduction 29
4.2 Socio-demographic information of home-based caregivers 29
4.3 Nutrition training received by home-based caregivers 30
4.4 Description of clients 31
4.5 Nutrition knowledge data 31
4.5.1 Food that form the basis of most meal 31
4.5.2 Importance of eating variety of foods 32

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4.5.3 Frequency of eating meat, chicken, eggs, fish and milk 32
4.5.4 Importance of advising clients to eat legumes (e.g. dried beans) regularly 32
4.5.5 Advice given to clients on fat intake 32
4.5.6 Advice given to clients on sugar intake 33
4.5.7 Advice given to clients on salt intake 33
4.5.8 Importance of physical activity 33
4.5.9 Frequency of consumption of vegetables and fruits 33
4.5.10 Importance of drinking clean safe water in the body 34
4.5.11 Causes of dehydration 34
4.5.12 Preparation of oral rehydration solution (ORS) 34
4.5.13 Composition of a balanced diet 35
4.5.14 Three basic food groups 35
4.5.15 Foods given to clients with swallowing difficulties 36
4.5.16 Nutrition advice given to clients with nausea and vomiting 36
4.5.17 Nutrition advice given to clients suffering from weight loss 36
4.6 Level of nutrition knowledge of caregivers 37
4.7 Correlation of demographic variables and level of nutrition knowledge 38
4.7.1 Correlation of marital status and level of nutrition knowledge 38
4.7.2 Correlation of educational qualification and level of nutrition knowledge 38
4.7.3 Correlation of HBC experiences and level of nutrition knowledge 39
4.8 Nutrition care practices obtained through focus group discussion 40
4.8.1 Training received by home-based caregivers 40
4.8.2 Continuous education and skill development of home-based caregivers 41
4.8.3 Support programs available for home-based caregivers 42
4.8.4 Care given to clients by home-based caregivers 43
4.8.5 Nutrition education given to clients by home-based caregivers 46
4.8.6 Assistance to clients who lack basic needs 50
4.8.6.1 Food 50
4.8.6.2 Shelter 51
4.8.6.3 Clothes 51
4.8.7 Challenges experienced by home-based caregivers 51
4.9 Nutrition care practices obtained through observations 52
4.9.1 Clients of category one 53
4.9.2 Clients of category two 53

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LIBRARY

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4.9.3 Clients of category three 54
4.9.4 Nutrition education given to clients 54
4.9.5 Other observations made to all clients 56
4.10 Relationship between nutrition knowledge and care practices of home-based caregivers 57
4.11 Factors that influence nutrition knowledge of home-based caregivers 58

CHAPTER FIVE: DISCUSSION OF THE RESULTS

5.1 Introduction 59
5.2 Socio-demographic information 59
5.3 Training received by home-based caregivers 60
5.4 Nutrition knowledge of home-based caregivers 63
5.5 Nutrition care practices of home-based caregivers 67
5.5.1 Conditions of clients 67
5.5.2 Care given to clients 68
5.6 Relationship of nutrition knowledge and care practices of home-based caregivers 70
5.7 Factors that influence nutrition knowledge of home-based caregivers 72
5.8 Challenges experienced by home-based caregivers 73

CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS

6.1 Introduction 74
6.2 Conclusion 74
6.3 Limitation of the study 75
6.4 Recommendations 75

REFERENCES 77

UNIVERSITY OF VENDA
LIBRARY

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LIST OF TABLES

Table 4.1: Socio-demographic information of home-based caregivers 29
Table 4.2: Years of home-based caregivers 30
Table 4.3: Nutrition training information 30
Table 4.4: Composition of a balanced diet indicated by home-based caregivers 35
Table 4.5: Advices given to clients with nausea and vomiting 36
Table 4.6: Advices given to clients suffering from weight loss 37
Table 4.7: Nutrition knowledge of home-based caregivers using a knowledge test 37
Table 4.8: Knowledge scale used to determine level of nutrition knowledge of caregivers 38
Table 4.9: Cross tabulation of marital status and level of nutrition knowledge 38
Table 4:10: Cross tabulation of educational qualification and level of nutrition knowledge 39
Table 4.11: Cross tabulation of HBC experiences and level of nutrition knowledge 39

LIST OF FIGURES

Figure 3.1: Villages where agencies are located 88
Figure 3.2: Number of home-based caregivers participated in the study 20

LIST OF APPENDICES

Appendix A: Map 88
Appendix B: Questionnaire 89
Appendix B1: Questionnaire (Xitsonga) 95
Appendix B2: Questionnaire (Tshivenda) 101
Appendix C: Interview Guide – Focus Group Discussion 108
Appendix C1: Interview Guide – Focus Group Discussion (Xitsonga) 109
Appendix C2: Interview Guide – Focus Group Discussion (Tshivenda) 110
Appendix D: Nutrition care practices observation checklist 111
Appendix E: Ethical clearance letter 113

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Appendix F: Permission letter to DHSD 114
Appendix G: Grant letter from DHSD 115
Appendix H: Permission letter to Vhembe District 116
Appendix I: Grant letter from Vhembe District 117
Appendix J: Concern form of Home-Based Caregivers 118
Appendix J1: Concern form of Home-Based Caregivers (Xitsonga) 120
Appendix J2: Concern form of Home-Based Caregivers (Tshivenda) 122
Appendix K: Editorial letter 124

ABBREVIATIONS

AIDS:	Acquired Immune Deficiency Syndrome
CBO:	Community-Based Organisations
CDW:	Community Development Workers
CPC:	Center for Positive Care
CRS:	Catholic Relief Services
DoH:	Department of Health
DOTS:	Directly Observed Treatment for TB
DHMT:	District Health Management Team
FBDGs:	Food Based Dietary Guidelines
FAO:	Food and Agricultural Organisations
FBO:	Faith-Based Organisations
HASA:	Hospice Association of South Africa
HBC:	Home-Cased Care
HDN:	Health and Development Network
HIV:	Human Immunodeficiency Virus
HSRC:	Human Sciences Research Council
HWSETA:	Health and Welfare Sector Education and Training Authority
IYCF:	Infant and Young Child Feeding
NGO:	Non-Governmental Organisations
ORS:	Oral Rehydration Solution
OVC:	Orphan and vulnerable children
PLWHA:	People Living With HIV and AIDS

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PMTCT:	Prevention of Mother to Child Transmission
RDP:	Reconstruction Development Programme
RtHB:	Road to Health Booklet
SAQA:	South African Qualification Authority
SAfAIDS:	Southern Africa HIV and AIDS Information Dissemination Service
SAFBDGs:	South African Food-Based Dietary Guidelines
SANHANES:	South African National Health and Nutrition Examination Survey
SPSS:	Statistical Package of Social Science
TB:	Tuberculosis
UNAIDS:	United Nations Programme of HIV/AIDS
UNDP:	United Nations Development Programme
USAID:	United States Agency for International Development
WHO:	World Health organization

DEFINITION OF OPERATIONAL TERMS

Home-based care – The World Health Organization defined home-based care as "the provision of health services by formal (health professionals) and informal caregivers (home-based caregivers or family caregivers) in the client's home in order to promote, restore and maintain a person's maximum level of comfort, function and health including care towards a dignified death" (Department of Health, 2001[b]:53).

Home-based caregivers – are any related or non-related people who visit clients in their homes to provide physical, social and/or psychological support during the period of intense need in order to improve their quality of life.

Nutrition knowledge – refers to the range of information or understanding of nutrition acquired by home-based caregivers through experience or training.

Nutrition care practices – refer to the way in which home-based caregivers provide nutrition services or support to their clients.

Clients – refer to people who receive home-based care services that are provided to their homes by home-based caregivers.

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1.1 BACKGROUND INFORMATION AND MOTIVATION OF THE STUDY

Nutrition is a major lifestyle factor in health promotion and is important in the prevention and management of chronic diseases such as diabetes, heart disease and obesity (Pignone *et al.*, 2003). According to the World Health Organisation (WHO, 2003[a]), the importance of nutrition in the prevention of chronic diseases has been recognised globally. In the developing countries, nutrition related problems are sometimes referred to as a double burden of diseases where obesity, diabetes and heart disease rest in the company of malnutrition (Tapsell and Probst, 2008). Nutrition knowledge and care practices of home-based caregivers play a vital role in mobilising communities to access nutrition care services for information on chronic diseases, human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS) and its treatment.

The goal of home-based care (HBC) is to provide hope through high-quality and appropriate care that helps patients and their family members to maintain their independence and achieve the best possible quality of life (WHO, 1999). In all countries, home-based caregivers have always been the major providers of HBC services for elderly people, patients with chronic diseases and HIV and AIDS (WHO, 2000). Therefore, HBC support programmes to alleviate this burden are essential for countries with high prevalence of HIV and AIDS and chronic diseases.

According to the WHO (2000), HBC is expanding rapidly in all countries due to increasing needs to a shift from hospital-based care to home and community care for economic reasons. Health Care Institutions are overflowing with HIV and AIDS infected patients and the health resources are depleted because of the growing number of patients who seek medical care (WHO, 2003[c]). The WHO (2000) further indicated that almost 90% of terminally ill patients are cared for at home. Therefore, organisations and governments have consistently recommended HBC approach for HIV and AIDS patients (van Rensburg, 2004).The ability of home-based caregivers to provide quality care and

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contribute to the management of diseases is of vital importance as it will assist to maintain nutritional status and improve quality of life of clients.

WHO (2000) indicated that public health services in developing countries are of poor quality because of diminishing resources and most of the population cannot afford private health care. Olenja (1999) indicated that in Sub-Saharan Africa, hospital care was not always affordable or accessible while HBC services rarely exist. As a result, family members especially women provided care for their patients. According to Kipp *et al.* (2007), home-based caregiving in developing countries is the most common care that HIV and AIDS patients received because primary health care services (clinic based services) are not accessible or affordable to the majority of people.

Many home-based caregivers lack confidence and feel unprepared to provide sustained HBC for people with chronic diseases because they do not have knowledge and skill to provide such care (Given *et al.*, 2008). According to Ndaba-Mbata and Seloilwe (2000), lack of knowledge among home-based caregivers was the most important contributor to poor quality care. This is also supported by a study done in Blantyre, Malawi, which showed that lack of prior preparation for home-based caregivers was a major factor contributing to poor service (Zimba and McInerney, 2001).

1.2 PROBLEM STATEMENT

Given *et al.* (2008) showed that studies have been done to identify health knowledge and skills that home-based caregivers require to provide HBC services. However, little is done on the implementation of interventions to improve their knowledge and skills. Schaller and James (2005) indicated that studies which measure the nutrition knowledge have been done among formal caregivers who are known as health professionals. Crogan *et al.* (2001) reported that most of these studies have been conducted in North America. Little information is available about nutrition knowledge and care practices of home-based caregivers (Farran *et al.*, 2004).

A study done in Vhembe district indicated that home-based caregivers had sufficient knowledge about HBC services that had been received through

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training (Moetlo *et al.*, 2011). Insufficient knowledge was noted for the management of chronic diseases (hypertension & asthma) and minor ailments as well as for counseling (Zimba and McInerney, 2001). These two studies did not show any nutrition knowledge and practices of the home-based caregivers.

One of the roles of home-based caregivers is to provide nutrition support to their clients. Nutrition students from the University of Venda worked with different home-based caregivers in Limpopo Province during their fourth year internship. From their assessment, students identified a gap of nutrition knowledge among home-based caregivers (Students' reports, 2008-2010). The information is not documented anywhere to assist the government to implement intervention strategies to address the gap of nutrition knowledge. Hence the researcher finds it imperative to conduct a study of this nature.

1.3 AIM OF THE STUDY

The study aimed to determine nutrition knowledge and care practices of home-based caregivers, the relationship between nutrition knowledge and care practices and to identify factors that influence nutrition knowledge of home-based caregivers in Makhado and Thulamela Municipalities, Limpopo Province, South Africa.

1.4 OBJECTIVES OF THE STUDY

The following objectives were to be achieved:

1.4.1 To assess nutrition knowledge of home-based caregivers.

1.4.2 To investigate nutrition care practices of home-based caregivers.

1.4.3 To investigate the relationship between nutrition knowledge and care practices of home-based caregivers.

1.4.4 To identify factors that influence nutrition knowledge of home-based caregivers.

1.5 SIGNIFICANCE OF THE STUDY

The importance of this study was to document the information about nutrition knowledge and care practices of home-based caregivers since there are no studies that have been done in South Africa. This information could help the Department of Health (DoH) and HBC accredited training providers to review the

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training packages for home-based caregivers, more especially on nutrition aspect. Therefore, home-based caregivers who will be trained with the reviewed manual will gain more knowledge and improve care practices on nutrition. The information could also help other researchers who may access the findings from different publications with literature.

1.6 ASSUMPTIONS OF THE STUDY

Home-based caregivers have been trained using a learner handbook for the training of home-/community-based caregivers (DoH, 2001[a]). In this handbook, nutrition is one of the components that formed part of the training. Therefore, the researcher assumed that home-based caregivers have adequate nutrition knowledge and good care practices since they were trained using this handbook.

1.7 STRUCTURE OF DISSERTATION

Chapter 1 outlines background information and motivation of the study. Problem statement, aim of the study, objectives of the study, importance of the study and assumptions of the study are also explained.

Chapter 2 discusses the literature related to the study under different sub-topics.

Chapter 3 explains the research methods that were followed to execute the study. The methods include study design, study population, sampling, instrument development, data collection procedures, ethical considerations and data analysis.

Chapter 4 shows the analysis and interpretation of the results of the study. The results are presented under different headings guided by the objectives of the study.

Chapter 5 presents the discussion of the results of the study in relation to those of other studies that have been done.

Chapter 6 outlines the conclusion and recommendations emerging from the study.

A detailed list of all cited references that have been used and appendices are attached at the end of the dissertation.

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2.1 OVERVIEW

Gaborone Declaration on Community Home-Based Care (2001) and WHO (2002) defined HBC as the care given to an individual in his/her own home by his/her family and supported by skilled welfare officers and communities to meet not only the physical and health needs, but also the spiritual, material and psychosocial needs. HBC is not a 24-hour service and does not replace the family as a primary caregiver. It is meant to be a complementary and supportive service to prevent burn-out for family caregivers who are forced to care for sick relatives (Western Cape DoH, 2001).

Approximately 396 877 people in Limpopo Province are infected with HIV where 47 000 were newly infected, 39 474 were already sick and 24 000 succumbed to AIDS-related deaths (Dorington *et al.*, 2006). The Human Sciences Research Council (HSRC, 2008) and the United Nations Programme of HIV/AIDS (UNAIDS, 2000) reported that South Africa had the largest burden of HIV and AIDS in the world with more than five million people living with the disease and the prevalence of 10.9% was among people aged two years and older. HBC is an innovative approach to comprehensively meet the needs of people living with HIV and AIDS (PLWHA), chronic diseases and disabilities in resource-limited settings (Israel and Platt, 2003). According to Colton *et al.* (2006), HBC bridges the gap between the health facilities and home care by enabling clients to receive quality and dignified services in their own homes as it is the best way for most people to be cared for.

The literature of this study will explain the roles of home-based caregivers, the training that they received and the existing programmes available to assist HBC agencies. In addition, nutrition knowledge of home-based caregivers will be assessed based on literature as well as their nutritional care practices during home visits and their challenges.

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2.2 ROLES OF HOME-BASED CAREGIVERS

The WHO (2002) provided a framework for the implementation of HBC with specific roles for health system at national, provincial, district and community levels. This follows the earlier call by WHO (2000) urging health systems to take responsibility for providing care in families with the necessary support to make the task of the caregiving bearable to home-based caregivers. As the number of PLWHA increases, the gap continues to widen between the demand and the availability of health care services. Home-based caregivers were expected to accompany clients to the clinic for treatment when necessary. In Botswana home-based caregivers are involved in transferring clients' medical supervision from a hospital, clinic and mental health facility to the patient's home in a given community setting (Ngwenya and Butale, 2005).

Home-based caregivers are responsible for running home and community based care programme and are affiliated to and supported by health centers (Silomba, 2002). Research has indicated that home-based caregivers had become significant contributors in the treatment, care and support of those infected and affected by HIV and AIDS (Mohammad and Gikonyo, 2005; League *et al.*, 2006 and Friedman *et al.*, 2010). These studies further indicated that home-based caregivers also provide care services to clients with chronic diseases, helpless clients, people with disability, orphans and vulnerable children (OVC) and frail elderly.

The support and care that are provided by home-based caregivers to the clients and families in their own homes include washing and bathing; feeding and helping with mobility; food production, storing, preparation and serving, cleaning, collecting wood or water, or any other task that supports the work of family members (WHO, 2000 and Ngwenya & Kgathi, 2006). Similar findings had been reported by the Administration of Aging (2000). According to Moetlo *et al.* (2011), the most common HBC services offered by home-based caregivers are health education (100%), giving medication (98%), management of hypertension (22%) and counseling (15%).

Zimbabwe's Red Cross distributed food to the home-based care clients who lack basic needs such as food, shelter and clothing (Khogali 2002). However, this

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was irregular and often not enough to meet the ever-growing needs of PLWHA due to funding constraints. Home- and community-based care organisations provide integrated services which ensure that the basic needs for food, shelter, education, health care, family or alternative care and protection from abuse and malnutrition of those infected and affected by HIV and AIDS are addressed (Friedman *et al.*, 2010).

2.3 TRAINING AND SUPPORT PROVIDED FOR HOME-BASED CAREGIVERS

In Lesotho, the national guidelines of community home-based care reflect the need for support of home-based caregivers and require the District Health Management Team (DHMT) to facilitate and ensure implementation of home-based care (Lesotho Ministry of Health, 2002). In addition, most interventions provided written materials that teach caregivers about the expected cause of an illness, treatment plans, short- and long-term adverse events and strategies for dealing with these effects. The WHO (2003[b]) produced manuals and guidelines on the emphasis of skill and knowledge development of home-based caregivers. The WHO (2003[b]) further indicated that the skills required by home-based caregivers include home nursing, management of HIV and AIDS and Tuberculosis (TB), care of the terminally ill clients and spiritual care. In Zimbabwe, most of the HBC training manuals that were developed focus on HIV and AIDS (Zimbabwe Ministry of Health and Child Welfare, 2005 and Colton *et al.*, 2006).

The Western Cape DoH (2001) indicated that home- and community-based caregivers have to complete a South African Qualification Authority (SAQA) HBC course that is accredited by Ancillary Health Care Qualification and facilitated and funded by the department. Furthermore, the provision of in-service training is important to ensure competency of home-based caregivers.

2.3.1 Learner handbook for the training of home-/community-based caregivers

The South African DoH has developed a learner handbook for the training of home/community-based caregivers to train home-based caregivers in view of equipping them to work as a member of health team, providing home care,

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education and support to clients and their families (DoH, 2001[a]). The component of nutrition is one of the 12 sections that were included on the handbook and it aimed to provide home-based caregivers with the knowledge of sound nutritional principles. The areas that were covered on the nutrition component include the three food groups and management of nutrition-related problems such as nausea and vomiting, weight loss, diarrhea and swallowing difficulties.

2.3.2 South African Food Based Dietary Guidelines

The DoH (2004) showed that South Africans usually eat and cook the way their parents used to. The food consumed and the preparatory methods are to a large extent determined by traditions and customs, food availability, affordability and preferences. In modern days this practice has been replaced by processed or convenience foods that provide excess energy and fats and insufficient vitamins and minerals. Consequently, people have to contend with a growing burden of chronic diseases such as cardiovascular disease, certain cancers, diabetes mellitus and dental carries as well as nutritional disorders associated with poverty and under nutrition.

To address the aforementioned nutritional problems the DoH (2004) has approved the Food Based Dietary Guidelines (FBDGs) for healthy eating for adults and children over the age of seven years. FBDGs are short, positive, science-based messages that aim to change the eating behaviour of the general population towards more optimal diets that meet energy and nutrient requirements, while simultaneously helping to protect against the development of non-communicable diseases (Vorster *et al.*, 2013). The guidelines form the core of the government's nutrition education messages with a view of promoting healthy lifestyle and eating habits among all South Africans.

The eleven guidelines were published in 2001 *(*Vorster *et al., 2001)* and revised in 2012 (Vorster *et al.*, 2013). The first published guidelines were used in this study and are categories as follows:

- Guidelines that provide general health messages to promote healthy lifestyle
  - Enjoy a variety of foods
  - Be active!

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- Drink lots of clean, safe water
- Guidelines that help planning of good mixed meals
  - Make starchy foods the basis of most meals
  - Eat plenty of vegetables and fruits every day
  - Eat dry beans, peas, lentils and soya regularly
  - Chicken, fish, meat, milk or eggs can be eaten daily
- And guidelines that teach about moderation and balance for healthy eating
  - Use fats sparingly
  - Use salt sparingly
  - Use food and drinks containing sugar sparingly and not between meals
  - If you drink alcohol, drink sensibly

2.3.3 Support structures for home-based caregivers

Naidu (2005) indicated that HBC services are offered by governments, non-governmental organisations (NGOs), community-based organisations (CBOs) and faith-based organisations (FBOs). Most of the HBC programmes in Zimbabwe are supported by government through the Ministry of Health and Child Welfare, NGOs, churches and other independent group (Mapfumira and Mawarire, 2013). In addition, the study indicates that support groups such as Action Faim, Red Cross and National Aids Council provide home-based caregivers with food, clothes and knowledge for caring for the clients. Jackson (2002) indicated that support from government, NGOs and other organisations vary but the bulk of day-to-day care is provided by the family hence family support is crucial in the HBC programme. In South Africa, support is offered by Government, NGOs, CBOs and FBOs. WHO (2000) indicated that home-based caregivers are supported, educated and supervised by the Family Welfare Educators, Social Welfare Officers and nurses. In Uganda, women were given advice on caregiving for their clients by health care professionals. However, they failed to follow such advice because of heavy emotional burden (Brouwer *et al.*, 2000).

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2.3.4 Duration of training for home-based caregivers

The duration of training for home-based caregivers differs from country to country and organisation to organisation. Schietinger *et al.* (1994) indicated that in Rwanda and Kenya training was conducted for five days. In Uganda training was run for 14 days (Byngire *et al.*, 1994). The Central Board of Health and United Nations Development Programme (UNDP) (2000) showed that home-based caregivers were trained for 21 days in Zambia. WHO (2000) recommended that home-based caregivers received three days training at the beginning and then continued the training and supervision while working with the community.

In South Africa, home-based caregivers were trained for 33 days by Sinosizo HBC, spreading out the training over a period of time (Sinosizo AIDS Care Commission, 2002). Similarly, in Kenya, HBC were trained by Pathfinder for 3 weeks, Grass Root Organisation Operating in Sisterhood for 2 days and Joy for 3 days (Irungu *et al.*, 2007). According to the South African DoH (2002), home-based caregivers attended a 70 hours classroom session and thereafter did practical at a clinical site for 160 hours at the hospice, primary health care clinics and hospital. Moreover, the DoH offered a three months course to home-based caregivers on basic skills of home and palliative care using a HBC curriculum that has been developed by Hospice Association of South Africa (HASA).

Refresher courses in Namibia are provided after a period of five to ten years (Niikondo *et al.*, 2011). According to Rendall-Mkosi and Phohole (2005), home-based caregivers were given weekly ongoing support by their supervisors or experts. The report made by the Southern Africa HIV and AIDS Information Dissemination Service and Health and Development Networks (SAfAIDS and HDN, 2007) in Zimbabwe stated that refresher courses are provided annually focusing on emerging issues, and specialist from nutrition and other fields were invited to train home-based caregivers. Provision of refresher courses is important to improve nutrition knowledge and care practices of home-based caregivers with up to date information.

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2.3.5 Training information received by home-based caregivers

Home-based caregivers of Mutale Municipality in Vhembe District were trained to identify the symptoms of typhoid, bilharzia, cholera and trachoma and to treat and handle these diseases in order to prevent further spread (Vhembe newsletter, 2008). The training further included the importance of improving personal hygiene, safe drinking water, environmental hygiene and water purification to help improve the health status of individuals. According to Chaava (2005) in the study conducted in Zambia, training for home-based caregivers covered home nursing skills, nutritional and psychosocial support of the clients.

Training package of home-based caregivers included supportive counseling, cleaning and dressing of wounds, oral hygiene, supervision of medication taking, necrotic wound care, pain management and diagnosis of opportunistic infections and directly observed treatment (DOTS) for TB (Ncama, 2005). Khogali (2002) indicated that the Zimbabwe's Red Cross conducted training for home-based caregivers on hygiene practices for infectious management, promotion of health and nutrition messages as well as to reduce stigma associated with HIV and AIDS. Nutrition training for home-based caregivers focused on the best food and lifestyle to follow for clients to stay healthy (www.etu.org.za, accessed 27 July 2011).

In Kenya, home-based caregivers had no skills to care for their clients (Olenja, 1999). Ndaba-Mbata and Seloilwe (2000) reported poor caregiving in Botswana because home-based caregivers were not trained to provide basic care. Zimba and McInerney (2001) indicated that in South Africa home-based caregivers lack HBC knowledge to provide appropriate care for their AIDS clients. Home-based caregivers in South Africa experienced more stress and distress than formal caregivers because of inadequate training, mentoring and support (Wainwright, 2002). Uys (2002) and Amuyunzu-Nyamongo *et al.* (2007) reported that in South Africa and Kenya respectively, home-based caregivers were inadequately trained to cope with the mental health problems of clients especially those related to alcohol abuse and depression. As a result, home-based caregivers were unprepared to provide counseling or palliative care and were also unable to respond to the specific needs of clients (de Saxe Zerden *et al.*, 2006). Home-

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based caregivers from different countries have been trained on nutrition focusing more on HIV and AIDS.

Uys (2002) indicated that adequate and ongoing training and support is essential for establishing credibility and legitimacy for home-based caregivers within the community or context of the health care system when collaborating with health care professionals. Furthermore, it is a challenge to HBC programmes that lack capacity to provide ongoing training to equip home-based caregivers with adequate skills to address the client's needs.

2.4 NUTRITION KNOWLEDGE OF HOME-BASED CAREGIVERS

Good nutrition is a lifelong process and malnutrition increases the severity of HIV and AIDS related diseases (Lesotho, 2000). Malnutrition can lead to impaired organ function but can be reversed if home-based caregivers have adequate nutrition knowledge. Clients have to be provided with the right food in the right amounts and combination to ensure that they get a balanced diet as most of the nutritional needs are met by eating a variety of foods which provide carbohydrates, fats, protein, minerals and vitamins. If clients eat a nutritious diet, it can help them to fight against infection and be more able to work and help out in the family.

In a study done by Ryan (1998), nutrition knowledge of home-based caregivers was minimal, despite the fact that many of them were educated beyond high school. However, the majority of home-based caregivers believed they were providing proper nutrition to the people they cared for. Conversely, Campbell *et al.* (2007) indicated that home-based caregivers of Entabeni, a rural community in Kwazulu-Natal showed to have knowledge about the importance of nutrition on the health of people. The study further revealed that home-based caregivers knew that hunger and lack of proper nutrition are some of the main hindrances to the recovery of illness in the community.

Home-based caregivers in Masvingo were educated on the importance of a balanced diet and have necessary nutrition knowledge (Mapfumira and Mawarire, 2013). However, lack of financial resources to buy food hinders the provision of appropriate nutritional care. Ryan (1998) indicated that caregivers'

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perceptions of proper nutrition may be based on accurate nutrition knowledge. Focus on education of home-based caregivers regarding nutritional needs of older adults and recognition of signs and symptoms of malnutrition may better maintain nutritional status and quality of life of the elderly. Nutrition education will not only improve knowledge and abilities of home-based caregivers, but also increase occurrence of preventive health behaviours such as eating regularly, not drinking alcohol, not smoking, engaging in physical activity as well as having adequate sleeping time (Gallagher and Hagen, 1996).

In the study done by Ryan (1998) to evaluate home-based caregivers' ability to determine the nutritional adequacy of their clients' dietary intake, home-based caregivers got low scores on a nutrition knowledge test that used food guide pyramid. This demonstrated a substantial need for nutrition education for home-based caregivers. According to Irungu *et al.* (2007), 3.4% of the home-based caregivers had adequate nutrition knowledge. Furthermore, educational level is also found to have positive effect comparing the duration of training and the results. In areas where training lasted for three weeks, home-based caregivers had better nutrition knowledge than those trained for one week and for two days. Home-based caregivers who had adequate knowledge on the nutritional needs of HIV and AIDS clients require more assistance on clients' care using limited resources available.

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2.5 NUTRITION CARE PRACTICES OF HOME-BASED CAREGIVERS

Du Plessis *et al.* (2013) indicated that home-based caregivers visit four to six clients per day considering the travelling duration and duties performed. In addition, the study showed that home-based caregivers scheduled on time, the activities to be done during home visits. This enabled them to make appointments with the clients in advance so that clients are found at home during the visits.

WHO (2002) indicated that home-based caregivers have to ensure that the basic needs such as shelter, food, safe water, sanitation, cooking utensil and clothing are met to ensure provision of quality services. During home visits, home-based caregivers assist their clients with meal preparation, household chores, giving medication and conducting needs assessment to identify supplies

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that may be needed during subsequent visits (Johnson and Khanna, 2004). According to Ncama (2005), home-based caregivers visit clients in their homes and spend time talking and educating them and their families about basic needs and also provide support with cooking, cleaning and errands, including accompanying clients to health facilities. Irungu *et al.* (2007) indicated that home-based caregivers offer environmental and personal hygiene, nutrition education, counseling and train family members on how to care for clients.

Zimba and Mclnerney (2001) indicated that very few (2.8%) home-based caregivers in Malawi give soft nourishing diet to clients suffering from mouth and throat problems while 55.6% give plenty of fluids and 2.8% nutritious food more frequently for management of diarrhea. Lack of access to clean safe drinking water will make AIDS-afflicted persons more vulnerable to HIV and AIDS as opportunistic infections are likely to thrive in poor hygienic conditions (Ngwenya and Kgathi, 2006).

2.6 CHALLENGES EXPERIENCED BY HOME-BASED CAREGIVERS

Home-based caregivers felt positive about the contribution they made to home-based HIV and AIDS projects in South Africa. However, they found it difficult to cope with the poverty and complexity of problems they faced (Uys, 2001). Caregivers experience poverty, social isolation, stigma, psychological distress and lack basic caregiving education (Lindsey *et al.*, 2003). Ogden *et al.* (2004) indicated that extreme poverty and poor food security in households with people living with HIV and AIDS hamper the utilisation of clinical and nursing skills. Home-based caregiving is very strenuous because caregivers have to deal with the burden of lack of necessary skills, training, knowledge and emotional tenacity to care and support their clients (League *et al.*, 2006).

Home-based caregivers found it difficult to assist PLWHA to meet their nutritional requirements because they lacked training aimed at proper nutritional support. Harding *et al.* (2003) indicated that it is also difficult for home-based caregivers to provide pain relief to their clients due to problems with drug availability, costs, transportation and lack of trained personnel to administer drugs. According to Castleman *et al.* (2004), people living with HIV and AIDS lack access to adequate nutritious foods and this poses a challenge and

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ultimately limits the efficiency of antiretroviral treatment. Medication works better with good nutrition to improve the health status of a sick person. Without adequate nutrition, home-based caregivers find it difficult to encourage PLWHA to comply with therapy (Mohammad and Gikonyo, 2005).

In Botswana, Odek and Oloo (2007) indicated that poverty, high cost of community care, inadequate medical facilities, poor infrastructure and socio-cultural issues have threatened the sustainability of HBC programmes. Lack of offices, transport and senior citizens refusing to be transferred to hospitals are some of the challenges experienced by home-based caregivers of Mutale Municipality (Vhembe newsletter, 2008). Most common problems encountered by caregivers in the study done by Moetlo *et al.* (2011) were structural such as unavailability of home-based care kits (54%), lack of resources (32%), lack of transport money (30%) and very low stipend (22%); problems with supervisors such as poor management skills (40%), selfishness (38%) as well as clients not taking prescribed medicines (45%) and not being welcomed by clients and family members (35%).

Jackson (2002) indicated that poverty is the contributing factor to poor nutrition. High expectations from clients and the community, poverty and uncooperative clients are other challenges that are experienced by home-based caregivers in Kenya (Irungu *et al.*, 2007). The study that was done in Zimbabwe by Mapfumira and Mawarire (2013) revealed that effective care of clients on HBC was hindered by lack of financial resources resulting in poor provision of food, sanitary facilities and adequate housing. In addition, some of the meals for clients were not balanced due to poor resources, and not lack of knowledge.

2.7 SUMMARY OF LITERATURE REVIEW

Home-based caregivers play an important role in the wellbeing of millions of people with terminal illnesses in Sub-Saharan Africa (Campbell and Foulis, 2004). It is highly imperative that attention be given to their needs and experiences. The information from literature informs the supervising organisations and policy makers on the gaps in the training and support of home-based caregivers in the provision of quality care to the clients at home and community settings. Hollander (1999) indicated that there is a need for the

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implementation of nutrition education programmes of home-based caregivers because they need to be skilled in rendering HBC services to their clients.

Mapfumira and Mawarire (2013) reported that home-based caregivers need training to maintain hygiene, increase clients' comfort and provide appropriate food as they play an important role by providing basic care to the clients. Mapfumira and Mawarire (2013) further indicated that the Zimbabwean National Community and Health Based Care Guidelines of 2001 stated that home-based caregivers need technical supervision, psychological & social support, encouragement and acceptance from the community members as motivation to care for the clients. These guidelines will protect home-based caregivers from social isolation, stigmatisation, stress and burnout.

The South African DoH (2001[b]) indicated that the involvement of home-based caregivers is very beneficial to the well-being of clients. However, home-based caregivers need to be screened carefully and well trained, and provision of ongoing support and advice to be available. Moetlo *et al.* (2011) indicated that the training that home-based caregivers receive is important in the improvement of HBC services.

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CHAPTER THREE
RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter explains the research methods that were followed to execute the study. The methods include study design, study population, sampling, instrument development, data collection procedures, ethical considerations and data analysis.

3.2 STUDY DESIGN

The study design was descriptive and exploratory. Descriptive research examines a situation as it is and does not involve changing or modifying the situation under investigation, nor is it intended to determine cause-and-effect relationships (Leedy and Ormrod, 2010:182). According to Watson *et al.* (2008:26), exploratory research is conducted when the researcher is not aware of any other studies in the area, or there is no definitive answer as to the best care, despite previous work. The researcher described nutritional knowledge and care practices of home-based caregivers and furthermore explored the relationship between nutritional knowledge and care practices as well as factors that influence nutritional knowledge.

Both quantitative and qualitative research techniques were used in this study. Quantitative research involves looking at amounts or quantities of one or more variables of interest (Leedy and Ormrod, 2010:94). Nutrition knowledge and other demographic variables were quantified. According to Watson *et al.* (2008:29), qualitative research gathers verbal or observational data and is concerned with how people understand their experiences and present their uniqueness of each participant's individual situation (idiographic). Focus groups interviews and observations on nutrition care practices formed part of the qualitative aspect of the research.

3.3 STUDY POPULATION

3.3.1 Target population

The target population was home-based caregivers from HBC agencies in Thulamela and Makhado Municipalities of Vhembe District. Vhembe District

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consists of four municipalities namely Makhado, Thulamela, Mutale and Musina. The two municipalities were purposively selected for the study. A list of agencies was obtained from the Department of Health and agencies found in the two municipalities were selected randomly. Figure 3.1 (see Appendix A) shows the villages where the selected home-based care agencies are located in Makhado and Thulamela Municipalities in Vhembe District.

3.3.2 Sample size

A list of all agencies was obtained from the DoH in Vhembe District. According to the DoH District statistics (2011), the total number of agencies was 46 and 50 in Makhado and Thulamela Municipalities respectively. From the list, the researcher chose to work with four agencies from each municipality due to budgetary constraints. Four agencies from Makhado Municipality were selected randomly and the same procedure was carried out for Thulamela Municipality. Simple random sample means that every member of the population has an equal chance of being selected (Leedy and Ormrod, 2010:201). The researcher assigned numbers to the agencies, cut it into small strips and place them in two different containers. The supervisor was requested to pick four strips from each container in the presence of the researcher. The agencies corresponding to the numbers selected were then included in the study.

A total number of 128 home-based caregivers were conveniently selected to participate in the study. From each agency, 12 home-based caregivers were randomly selected to form part of the focus group discussion (FGD). The researcher assigned numbers to all home-based caregivers who were interviewed from each agency and cut into small strips. The agency manager was requested to pick 12 strips in the presence of the researcher and home-based caregivers corresponding to the numbers selected formed part of the focus group discussion. In agencies where participants were between nine and eleven, all were automatically included without following the selection procedure. According to Leedy and Ormrod (2010:148), focus group consists of no more than 10 or 12 participants. A total of 92 home-based caregivers participated in the focus group discussions. The same procedure was used to select two home-based caregivers from each agency who were visited in households. A total of 16 home-based caregivers were selected. However, 28 were accompanied for

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home visits because some were in a group of two or three. Figure 3.2 illustrates the number of home-based caregivers who participated in the study. The description of the colours on the figure is as follows:

- Tan represents the selected municipalities,
- Light blue represents the number of home-based caregivers interviewed,
- Orange represents the number of home-based caregivers who formed part of a focus group discussions, and
- Pink represents the number of home-based caregivers followed during home visits for observation and the number of clients visited.

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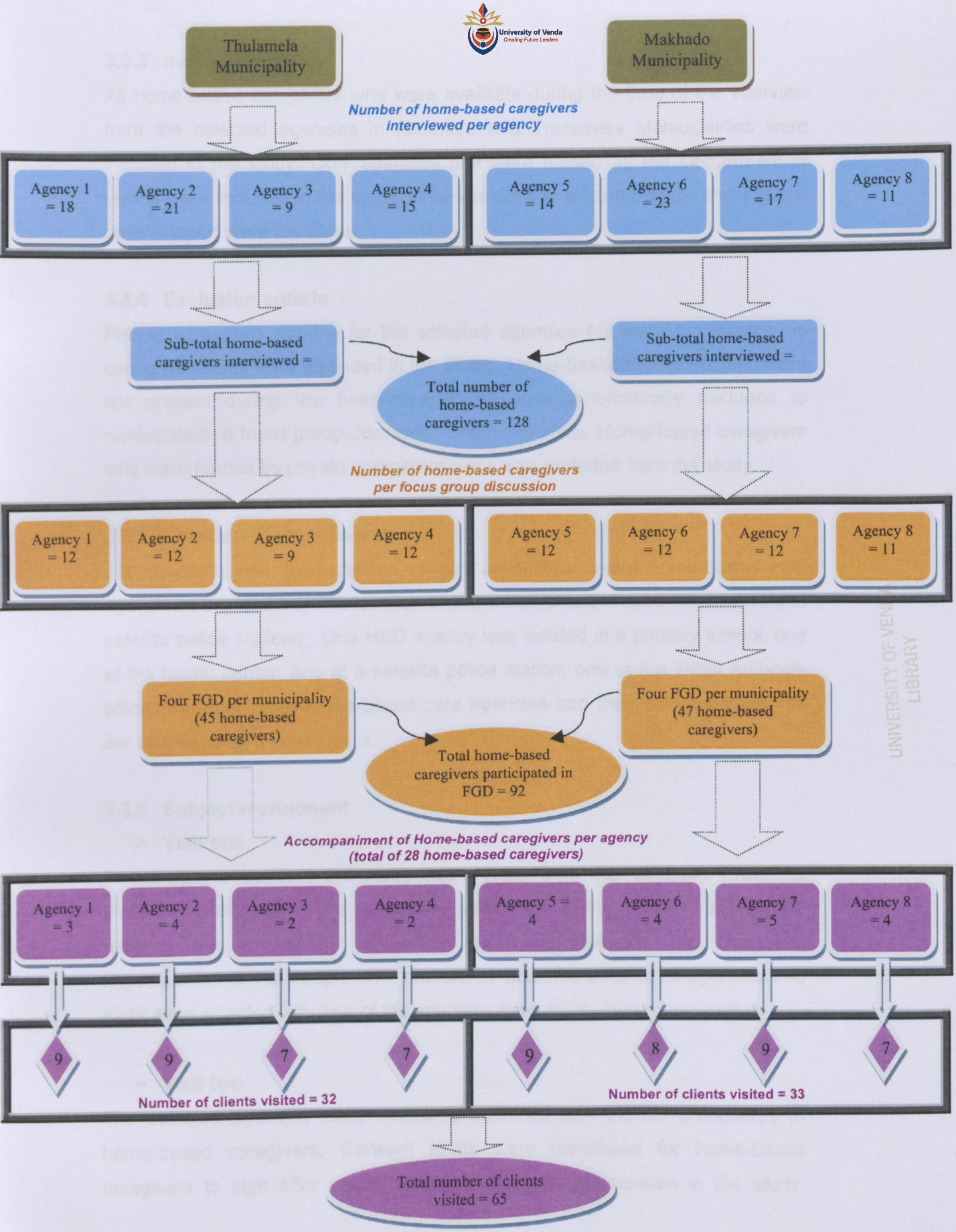


Figure 3.2: Number of home-based caregivers participated in the study

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3.3.3 Inclusion criteria

All home-based caregivers who were available during the time of the interview from the selected agencies in Makhado and Thulamela Municipalities were included in the study. Only agencies that were funded by the Department of Health were included in the study. This was done to ensure that the training and other support were the same.

3.3.4 Exclusion criteria

People who were working for the selected agencies but were not involved in caring for clients were excluded in the study. Home-based caregivers who were not present during the time of interview were automatically excluded to participate in a focus group discussion and home visits. Home-based caregivers who were funded by private companies were also excluded from the study.

3.3.5 Location of the research

The research was conducted in various institutions where home-based care agencies were located. The location of these institutions ranged from schools to satellite police stations. One HBC agency was located at a primary school, one at the health center, one at a satellite police station, one at the Tribal Authority offices and four other home-based care agencies had their own buildings that are also used by mobile clinics.

3.3.6 Subject recruitment

- **Visit one**

Permission to conduct the study was sought from the Limpopo Provincial Department of Health. The researcher visited the district office to explain the research and to ask for permission to include Makhado and Thulamela Municipalities in the sample. The researcher obtained a list of all agencies and eight were selected with four of the agencies from each of the municipalities.

- **Visit two**

The selected agencies were visited to introduce and explain procedures to home-based caregivers. Consent forms were distributed for home-based caregivers to sign after verbal assent to approve participation in the study.

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Those who agreed to participate were interviewed. Each interview lasted between 30 to 45 minutes.

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- **Visit three**

The third visit was meant for focus group discussions. Each discussion lasted between 90 minutes to two hours. The aspects of the discussion included care practices, nutrition training and support structures. The groups consisted of nine to 12 home-based caregivers with the exclusion of the facilitator and a field worker. One field worker took the notes while the discussion proceeded. The facilitator chaired the discussion session and the discussions were recorded.

- **Visit four**

Visit four was meant for home visits and observations. Home-based caregivers who formed part of the focus group discussions were randomly selected for home visits. Each home-based caregiver was followed for between one and five clients. A total of 28 home-based caregivers were followed and 65 clients were visited. Aspects of home visits included observation of nutrition care practices. One visit lasted between 30 to 90 minutes depending on the condition of clients being cared for.

3.4 INSTRUMENTS DEVELOPMENT

Three instruments (questionnaire – appendix B, interview guide - Appendix C and observational checklist – appendix D) were developed by the researcher following the objectives of the study and related literature. The questionnaire and the interview guide developed were translated from English to Xitsonga (appendix B1 and C1) and Tshivenda (appendix B2 and C2) by a person who is fluent in the three languages. The person is a specialist from the MER Mathivha Center for Linguistics and the Department of English at the University of Venda.

3.4.1 Variables measured

A variable is any quality or characteristic in a research investigation that has two or more possible values (Leedy and Ormord, 2010:224). The variables in the study included nutrition knowledge, nutrition care practices and socio-demographic status of home-based caregivers.

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3.4.1.1 Nutrition knowledge of home-based caregivers

Nutrition knowledge refers to having knowledge on information about South African FBDGs and food groups by home-based caregivers. Nutrition knowledge was measured by a knowledge test where home-based caregivers were graded upon completion. A likert scale was used to classify the level of knowledge home-based caregivers had. The test was derived from the South African FBDGs (DoH, 2004) and a Learner Handbook for the Training of Home/Community-Based Caregivers (DoH, 2001[a]).

3.4.1.2 Nutrition care practices

Nutrition care practices refer to the nutritional care given to clients at their homes by home-based caregivers. Nutrition care practices were measured by observing how the caregivers cared for their clients as stipulated by the learner handbook of the Department of Health. The researcher paid attention to the following aspects: nutritional education given to the clients, hygiene practices in food handling and the environment.

3.4.1.3 Socio-demographic status

Socio-demographic information refers to the characteristics of the selected home-based caregivers. In this study the socio-demographic information of home-based caregivers was measured by the use of the following characteristics: age, gender, marital status, educational level and qualifications. The information enabled the researcher to link it with other variables, and to control for confounding factors.

3.4.2 Questionnaire

The questionnaire (see Appendix B) consisted of socio-demographic information (section A), general nutrition knowledge (section B) and nutrition knowledge test (section C). Socio-demographic information section included the characteristics of home-based caregivers. Nutrition knowledge questions were developed using the South African FBDGs and section 11 (nutrition) of a learner handbook for the training of home-/community-based caregivers that is used by the Department of Health (DoH, 2001[a]). The questionnaire was researcher-administered using face-to-face interview and it lasted between 20 and 30 minutes per home-based caregiver.

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3.4.3 Interview guide

A semi-structured open-ended interview guide (see Appendix C) was developed looking at the study objectives and literature by other researchers in the same field. The focus of the guide was on nutrition training, care practices and support structures. The development of the interview guide was also informed by the HBC training manual of the Department of Health.

3.4.4 Observational checklist

The observational checklist (see Appendix D) was developed using the learner handbook for the training of home-/community-based caregivers by the Department of Health. The checklist was used to record the nutrition care practices provided by home-based caregivers at the homes of their clients. The roles that home-based caregivers are supposed to play are stipulated in the handbook.

3.4.5 Pilot study

Pilot study was conducted to test the feasibility of the entire study. It was done using ten home-based caregivers who were not selected for the study. Five home-based caregivers were from Makhado Municipality and the other five were from Thulamela Municipality. According to Schneider *et al.* (2004:133), a pilot study is a small-scale study undertaken to obtain information to improve the quality or to test the feasibility of conducting a larger study.

The information obtained upon piloting assisted the researcher to assess the flaws from conceptualisation to the execution stage. The information obtained was analysed for above mentioned reasons and the instruments were improved.

The following changes and additions were made on the instruments after pilot:

- Question 6
  - Before: Do you have nutrition training in any health or nutrition related qualification(s)?
  - After: Do you have any qualification(s)?
- Question 12
  - Before: What kind of people do you usually care for?

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- After: What types of condition do the people you care for usually have?

- Question 16 was closed-ended then changed to open-ended like the rest of the questions in section B.
- Question 13, 14, 15 and section C (nutrition knowledge test) were added.

3.4.6 Validity and reliability

3.4.6.1 Validity

According to Leedy and Ormrod (2010:28), validity of a measurement instrument is the extent to which the instrument measures what it is actually intended to measure. Firstly the instruments were developed following the objectives of the study and related literature. Secondly, the questionnaire was pilot tested and pre-texted to check the clarity of the questions. It suffices to mention the fact that five colleagues from the Department of Nutrition were used for this exercise. Thirdly, the instrument was presented to the Department of Nutrition during the proposal presentation for peer review. Finally, the Ethics Committee of the University of Venda provided yet another avenue for instrument validation. The outcome of the pilot and pre-test exercise informed the restructuring and modification of the research instruments.

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3.4.6.2 Reliability

Reliability refers to the accuracy and consistency of information obtained in the study (Polit and Beck, 2004:35). Data was collected using local languages to ensure accuracy of information. The researcher conducted all interviews and home visits for consistency. During focus group discussions, the researcher and a trained research assistant wrote responses to ensure reliability of the recorded information. The discussions were recorded using Bell Office digital voice recorder (model 400D).

3.5 DATA COLLECTION PROCEDURE

3.5.1 Physical arrangements

The researcher was given a private room to interview the home-based caregivers using a questionnaire. One home-based caregiver was interviewed at a time to ensure privacy.

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During focus group discussions, home-based caregivers were sitting in a semi-circle where the facilitator could see all the group members. The setting was relaxed and informal to allow for active participation.

Home visits were also done by the researcher. The home-based caregivers introduced the researcher to the clients and explained the purpose of the visits. The caregiver then continued with his/her daily activities in the presence of the researcher. This was repeated with 65 clients.

3.5.2 Tools and specific procedures

Questionnaire, interview guide and observational checklist were used to collect data. These data collection tools were developed by the researcher with the assistance of the supervisors. The questionnaire was piloted in two HBC agencies. Data was collected in three phases over a period of eleven months (June 2011 to April 2012) as indicated in the subject recruitment section.

3.5.3 Field workers

A staff member and a third year nutrition student were recruited as field workers. The field workers were trained and the methods (for example interview) of data collection were standardised and pilot tested. The field workers were trained to take field notes during the focus group discussions. The field workers were chosen on the basis of their knowledge in the field of nutrition.

3.6 INSTITUTIONAL APPROVAL

The research proposal was submitted to the Higher Degree Ethical Committee of the School of Health Sciences for approval before data collection. The ethical clearance certificate was issued and the research project was registered (SHS/10/NUT/001) (see Appendix E). The proposal and the ethical clearance certificate were then submitted to the provincial Department of Health seeking permission to conduct the study using Home based caregivers (Appendix F). Once permission was granted at provincial level (see Appendix G), the researcher further requested permission from the district office (see Appendix H) to be able to obtain a list of HBC agencies to include in the sample. Once permission was granted from the district office (Appendix I), the selected

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agencies were visited and caregivers were invited to participate in the study after the research was explained to the agencies' managers.

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3.7 ETHICAL CONSIDERATION

The study was approved by relevant committee and authorities and permission was granted as indicated on the section of institutional approval in 3.6. All home-based caregivers who entered the study signed an informed consent (see Appendix J) after a full and adequate explanation of the study had been provided by the researcher. The consent form was translated to Xitsonga (Appendix J1) and Tshivenda (Appendix J2). Home-based caregivers had the right to withdraw from the study at any stage without stating their reason and the researcher could also withdraw a home-based caregiver from a study at any time. There were no direct benefits to the home-based caregivers and no risks involved. For data verification and quality control purposes regulatory authorities and/or the research team may be allowed to access the data under conditions of strict confidentiality. To ensure anonymity of home-based caregivers, codes were used instead of names.

3.8 DATA ANALYSIS

Socio-demographic and nutrition knowledge information were cleaned, coded and entered into the Microsoft Excel 2010 spreadsheet and imported to Statistical Package for Social Sciences (SPSS) version 21 for analysis. The results were analysed using descriptive statistics such as percentage. Chi-square and P-value ($P<0,005$) were used to test the significance difference of the socio-demographic parameters and level of nutrition knowledge. Nutrition knowledge data was interpreted using South African Food Based Dietary Guidelines and a learner handbook for the training of home-/community-based caregivers.

Thematic analysis was used to analyse information obtained from the focus group discussions and observations. The recorded focus group information was transcribed to Xitsonga by the researcher and to Tshivenda by a research assistant in the presence of the researcher for accuracy. Both researcher and assistant are Xitsonga and Tshivenda speaking respectively. The hand written information for both the researcher and research assistant was compared with

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the voice recorded information. Thereafter, transcribed information was sent to language specialists at the MER Mathivha Center and Department of English, University of Venda for translation to English. Similar responses were categorised together into themes. Information that was obtained from observation during home visits was reported according to the conditions of the clients.

3.9 DISSEMINATION OF INFORMATION

Copies of the dissertation upon completion of the study will be submitted to the Department of Nutrition at the University of Venda and to the Limpopo Provincial Department of Health. Hard and electronic copies will also be available at the Library of the University of Venda. All home-based care agencies participated in this study will receive a copy of the dissertation. The information will further be presented orally to various symposia and congresses at local (during school research day), provincial, national and international levels. Furthermore, the information will be published in a peer reviewed accredited journal.

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4.1 INTRODUCTION

The results of the study are presented in this chapter. The socio-demographic information of home-based caregivers, nutrition knowledge data and nutrition care practices are reported. The relationship between nutrition knowledge and care practices and factors that influence nutrition knowledge as well as challenges experienced by home-based caregivers are also reported.

4.2 SOCIO-DEMOGRAPHIC INFORMATION OF HOME-BASED CAREGIVERS

A total of 128 home-based caregivers participated in this study, of which 99.2% were females with males only being 0.8%. The majority (84.3%) were aged 30 to 50 years. More than half (52.3%) were married and 36.7% were single. About 68.7% had secondary education while 18% had tertiary education mainly from Further Education and Training Colleges (FETs). In addition, 23.4% of home-based caregivers were in possession of specific qualifications. All home-based caregivers received a stipend of R1411.80 per month and every caregiver of agency 4 had an additional amount of R1000 from the South African Lottery sponsorship during the time of the study. Table 4.1 illustrates the socio-demographic information of home-based caregivers.

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Table 4.1: Socio-demographic information of home-based caregivers

Variables	Number (n = 128)	Percent (%)
Age (years)		
Less than 30	8	6.3
30 – 40	62	48.4
41 – 50	46	35.9
More than 50	12	9.4
Marital status		
Married	78	61.0
Single	47	36.7
Divorced	3	2.3
Educational level		
Never attended	4	3.1
Grade 1 – 4	8	6.3
Grade 5 – 7	5	3.9
Grade 8 – 10	19	14.8
Grade 11 – 12	69	53.9
Tertiary	23	18
Type of qualifications		
Office administration	15	11.7
Artisan	1	0.8
Welfare	5	3.9
Cooks	2	1.6
Technician	1	0.8
Educator	6	4.7

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Home-based caregivers started working for home-based care agencies from 1990 to 2010 and their years of experience are indicated in table 4.2. About 11.1% started working before 1999 under the NGO known as Center for Positive Care (CPC). Currently, all home-based caregivers in this study were working for agencies that are under the Department of Health.

Table 4.2: Years of home-based care experience

Years of experience	Number (n = 128)	Percent (%)
1 – 5 years	24	18.8
6 – 10 years	82	64.1
More than 10 years	22	17.2

4.3 NUTRITION TRAINING RECEIVED BY HOME-BASED CAREGIVERS

Almost all home-based caregivers (94.5%) indicated that they received training about nutrition. The main source of information was nurses (59.4%). Table 4.3 summarises nutrition training information of home-based caregivers.

Table 4.3: Nutrition training Information

Variables	Number (n = 128)	Percent (%)
Received training about nutrition		
Yes	121	94.5%
No	7	5.5
Sources of information		
Nurses	76	59.4
Home-based caregivers	15	11.7
Nurses & home-based caregivers	10	7.8
Dietitians or Nutritionists	9	7.1
Representatives from CPC	7	5.5
Educators	4	3.1
Type of information received		
Nutrients	111	86.7
Food groups	54	42.2
Food handling and preparations	30	23.4
Personal hygiene	19	14.8
Management of diseases	9	7.8
Environmental hygiene	6	4.7
Physical activity	3	2.3

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4.4 DESCRIPTION OF CLIENTS

Almost all home-based caregivers (95.3%) indicated that they got to know that people needed their services during door-to-door campaigns, 73.3% got referrals from the clinics and 25% were informed by relatives and/or friends of clients while 23.4% were approached by clients.

Home-based caregivers care for clients with different conditions. Almost all home-based caregivers (96.1%) care for clients who are suffering from chronic diseases of lifestyle such as hypertension, diabetes mellitus, stroke, epilepsy and so forth, 69.5% care for clients with communicable diseases such as HIV and AIDS, TB and malaria, 42.2% care for mentally ill clients and 19.5% care for disabled clients. In addition, very few home-based caregivers indicated that they also take care of clients with ulcer (3.9%), OVC (6.3%) and wounds (7.8%).

About 19.5% of home-based caregivers indicated that they visited seven and/or more clients per day, 67.2% indicated five to six clients while 13.3% indicated three to four clients. Less than half of home-based caregivers (40.6%) indicated that they spent 30 minutes for clients who are able to take care of themselves, 57.8% spent between 31 and 60 minutes and 1.6% spent between 61 and 90 minutes. For bedbound clients (those who cannot care for themselves), 1.6% of home-based caregivers spent 30 minutes, 28.9% spent between 31 and 60 minutes while 21.1% spent between 61 and 90 minutes.

4.5 NUTRITION KNOWLEDGE DATA

Nutrition knowledge of home-based caregivers was tested using a questionnaire based on South African FBDGs and a learner handbook for the training of home-/community-based caregivers. All the questions were open-ended to allow home-based caregivers the opportunity to express their knowledge and give multiple responses. Therefore, the number of responses is not equal to the total number of home-based caregivers (n = 128). The responses that were given are indicated below under the following headings:

4.5.1 Food that form the basis of most meal

Almost all home-based caregivers (95.3%) indicated that starchy foods such as porridge, rice, bread and samp form the basis of most meals. Other responses

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that were given included vegetables (44.5%), fruits (28.9%), meat (9.4%) and beverages such as tea and juice (3.9%).

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4.5.2 Importance of eating a variety of foods

About 38.3% of home-based caregivers indicated that eating a variety of foods assists clients to get different nutrients for a balanced diet while others indicated that it is important for good growth and development (77.3%), protect the body against diseases (67.2%), gives energy (33.6%) and for proper digestion (9.4%).

4.5.3 Frequency of eating meat, chicken, eggs, fish and milk

More than three quarter of home-based caregivers (76.6%) indicated that meat, chicken, eggs, fish and milk could be eaten one to three times per week, very few (3.1%) indicated four to six times per week while 5.5% indicated daily. Only 14.8% indicated that milk could be eaten on a daily basis.

4.5.4 Importance of advising clients to eat legumes (e.g. dried beans) regularly

About 57.8% of the home-based caregivers indicated that they advised their clients to eat legumes regularly to build the body/to get protein/maintain and repair body cells while 18.7% indicated that it prevents constipation and assists with proper digestion. Other responses given were for clients to get energy/carbohydrates (35.9%), to protect the body against diseases/get vitamin (A, B, D) and minerals (35.9%), to strengthen bones (7.8%) and to keep a healthy body (7.8%).

4.5.5 Advice given to clients on fat intake

Almost all home-based caregivers (99.2%) gave appropriate responses when asked about the advice they give to their clients on fat intake. The responses given indicated that fats should be eaten sparingly by removing visible fats from meat and skin of chicken before cooking, adding little fat or not at all when cooking vegetables, consuming lean meat and limiting the intake of fatty foods. Furthermore, about 13.3% of home-based caregivers advised their client to use boiling, grilling or drying foods instead of frying while 6.3% indicated the use of vegetable oil such as olive oil. Very few home-based caregivers (1.6%) advised underweight clients to eat a lot of fat to be able to gain weight.

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4.5.6 Advice given to clients on sugar intake

Almost all home-based caregivers (97.7%) advised their clients to consume sugar sparingly while 14.1% advised diabetic clients to use artificial sweeteners. Home-based caregivers indicated that the consumption of too much sugar may lead to diabetes mellitus, loss of appetite, nausea, edema, bile, diarrhea and dental carries. About 3.1% of the home-based caregivers advised clients to consume brown sugar rather than white sugar as it is said to be less sweet and it will assist those with low blood sugar level (hypoglycemia). Very few of the home-based caregivers (4.7%) advised clients to consume more fruits to get natural sugar which it is not dangerous.

4.5.7 Advice given to clients on salt intake

Almost all home-based caregivers (98.4%) advised their clients to eat salt sparingly. Home-based caregivers indicated that too much consumption of salt causes high blood pressure, bilharzia, edema during pregnancy, diarrhea, headache and dry mouth. About 10.2% of home-based caregivers advised clients to use iodated salt to prevent goiter and 6.3% advised clients to use Knorr cubes and aromat instead of salt. Fewer than 5.5% of home-based caregivers advised clients to use fine salt as is iodated and easy to measure, to add salt at the beginning of cooking and to avoid adding salt when eating.

4.5.8 Importance of physical activity

All home-based caregivers gave appropriate responses on the importance of physical activity for their clients. The responses varied from one home-based caregiver to the other and were as follows: proper circulation of blood (21.1%), stretch body muscles (40.6%), prevent the body against diseases (58.6%), improve digestion of food (7.8%), strengthen bones (26.6%), manage body weight (34.4%), relieve stress (20.3%) and to maintain a healthy body (66.4%).

4.5.9 Frequency of consumption of vegetables and fruits

Home-based caregivers indicated that clients have to consume fruits (81.3%) and vegetables (67.2%) every day. Very few of the home-based caregivers indicated that clients have to consume fruits (7% and 11.7%) and vegetables

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(10.2% and 22.7%) four to six times and one to three times per week respectively.

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4.5.10 Importance of drinking clean safe water in the body

All home-based caregivers gave appropriate responses about the importance of drinking clean safe water. The responses varied from one home-based caregiver to the other and were as follows: prevention of cholera, diarrhea, bilharzia (93.8%), for proper transportation, digestion and absorption of food (74.2%), for addition of blood in the body (42.2%), to maintain healthy skin (32.8%), removal of waste from the body through urine and sweat (28.1%), prevention of dehydration (22.7%), regulation of body temperature (10.9%), lubrication of joints (7%) as well as to quench the thirst (1.6%).

More than half of home-based caregivers (64.1%) indicated 6 to 8 glasses (1.5 to 2 liters) as the amount of water clients should drink per day while 23.4% indicated 4 to 5 glasses (1 to 1.25 liters) and 10.9% indicated more than eight glasses (2 liters) per day. Only 1.6% of home-based caregivers did not know the amount of water clients should drink per day.

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4.5.11 Causes of dehydration

The causes of dehydration were indicated by 68.8% of home-based caregivers to be diarrhea and 50% vomiting, which are correct. Other causes that were indicated included lack of a balanced diet or eating dried food and non-nutritive substances (13.3%), severe sweat (9.4%), severe bleeding (3.1%), drug and alcohol abuse (1.6%) as well as frequent urination (0.8%).

4.5.12 Preparation of oral rehydration solution (ORS)

About 40.6% of home-based caregivers knew the correct method of preparing ORS (mixture of 1 liter boiled water, 8 teaspoons level sugar and ½ teaspoon level salt) and 57.8% who did not know indicated incorrect amount of salt (36.7%), sugar (17.2%) and water (3.9%). Very few (1.6%) indicated the use of ready-made ORS.

About 38.3% of home-based caregivers knew that ORS should be given to the child every time after vomiting or passing watery stool (diarrhea). Other home-

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based caregivers indicated that ORS should be given three to four times per day (25.8%), every time when the child is thirsty (24.2%) and every 10 to 30 minutes (11.7%).

4.5.13 Composition of a balanced diet

Table 4.4 illustrates the responses on the composition of a balanced diet and the appropriate ones are indicated in bold. Almost all home-based caregivers (96.9%) responded and 89.1% gave appropriate responses. Home-based caregivers specified the food items to be included in each meal which is breakfast, lunch and supper. Therefore, the researcher arranged the food items according to major nutrients. That is, carbohydrate (porridge, rice, macaroni or bread), protein (meat, chicken, fish or polony), vitamins & minerals (fruits & vegetables) as well as beverage (fruits juice, soft drink, tea or water).

Table 4.4 Composition of a balanced diet indicated by home-based caregivers

Responses	n = 124	%
Carbohydrate, protein, vitamins and minerals and beverage	**65**	**50.8**
Carbohydrate, protein, vitamins and minerals	**28**	**21.9**
Carbohydrate, vitamins and minerals and beverage	**7**	**5.5**
Carbohydrate, protein and beverage	**14**	**10.9**
Carbohydrate, vitamins and minerals	4	3.1
Carbohydrate and beverage	1	0.8
Carbohydrate and protein	3	2.3
Carbohydrate	1	0.8
Protein and vitamins and minerals	1	0.8

4.5.14 Three basic food groups

Less than half of home-based caregivers (43.8%) listed all three basic food groups while 32.8% mentioned one or two. Of the 32.8%, 10.2% did not remember the other one while 4.7% indicated fatty food. Only 23.4% of home-based caregivers did not know any of the three basic food groups.

When home-based caregivers were asked to give examples of energy foods, body building foods and protective foods, 88.3% knew that starchy foods provide energy, 85.9% knew that protein foods are responsible for body building while 82% and 82.8% knew that fruits and vegetables respectively protect the body against diseases.

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4.5.15 Foods given to clients with swallowing difficulties

Almost all home-based caregivers (97.7%) indicated soft foods such as soft porridge, custard, jelly, soups, yoghurt and/or mashed (potato, banana, pumpkin, avocado & beans) to be given to clients with swallowing difficulties. In addition, 82.8% indicated beverages (milk, tea, juice or mageu) while 13.3% indicated mixture of porridge and milk. Very few indicated salt solution which is a mixture of salt and water (1.6%), macaroni (1.6%) and boiled egg (0.8%). Mixture of salt and water was said to clear the throat due to its sour taste.

4.5.16 Nutrition advice given to clients with nausea and vomiting

Home-based caregivers were asked to describe advice given to clients with nausea and vomiting. The responses are indicated in table 4.5. Appropriate statements are indicated in bold.

Table 4.5: Advice given to clients with nausea and vomiting

Responses	n = 128	%
Avoid sugary, salty and fatty foods	**91**	**71.1**
Eat small meals frequently and slowly	**69**	**53.9**
Drink lots of water or ORS after vomiting	**65**	**50.8**
Avoid hot foods	**10**	**7.8**
Eat or smell orange and lemon to increase appetite	**27**	**21.1**
Eat dry carbohydrate food	**10**	**7.8**
Avoid bad cooking odor	**5**	**5.5**
Elevate upper part of the body after eating	**2**	**1.6**
Eat sweets, sugar when nauseas	27	21.4
Eat fast	14	10.9
Chew gums when nauseas	12	9.4
Eat more when not nauseas and vomiting	7	5.5
Eat in a company	3	2.3
Do self-induced vomiting	3	2.3

4.5.17 Nutrition advice given to clients suffering from weight loss

Home-based caregivers were asked to describe advice given to clients suffering from weight loss. The responses are indicated in table 4.6. Appropriate statements are indicated in bold.

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Table 4.6: Advice given to clients suffering from weight loss

Responses	n = 128	%
Eat a variety of foods to gain weight	**124**	**96.1**
Drink lot of water	**28**	**21.9**
Eat small frequent meals	**26**	**20.3**
Refer to Dietician / clinic for frequent monitoring of weight	**6**	**4.7**
Take B-vitamins to increase appetite	**4**	**3.1**
Avoid alcohol and drug abuse	**4**	**3.1**
Eat pilani soft porridge to get energy	**1**	**0.8**
Avoid stress	**1**	**0.8**
Take medication properly after meal if needed	15	11.7
Exercise moderately	12	9.4
Eat in a company	1	0.8

4.6 LEVEL OF NUTRITION KNOWLEDGE OF CAREGIVERS

Level of nutrition knowledge of home-based caregivers was assessed using a test based on 11 items that are indicated in table 4.7. The accumulative responses to the items are indicated by percentage distribution of appropriate responses. All home-based caregivers had given appropriate response about the advice given to clients on fat intake. Less than one third (31.2%) of home-based caregivers had given appropriate response about the advice given to clients suffering from weight loss.

Table 4.7: Nutrition knowledge of home-based caregivers using a knowledge test

Description of items	Appropriate responses (n=128)	Percentages (%)
Food that form the basis of most meal	122	95.3
Importance of advising clients to eat legumes (dried beans)	74	53.8
Advice given to client on fat intake	128	100
Frequency consumption of vegetables and fruits	97	75.8
Preparation of ORS	52	40.6
Three basic food groups	56	43.8
Examples of energy foods	96	75.0
Examples of body-building foods	101	78.9
Examples of protective foods	100	78.1
Nutrition advice given to clients with nausea and vomiting	55	43.0
Nutrition advice given to clients suffering from weight loss	40	31.2

The researcher used the knowledge scale indicated in table 4.8 to determine the level of nutrition knowledge of home-based caregivers. Home-based caregivers who scored 7 and less were regarded as having limited nutrition knowledge; those who scored 8 to 10 were regarded as having satisfactory nutrition knowledge while those who scored 11 (100%) were considered to have

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adequate nutrition knowledge. Data show more than half (53.9%) of home-based caregivers with limited knowledge.

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Table 4.8: Knowledge scale used to determine level of nutrition knowledge of caregivers

Score (correct responses)	Percentages (%)	Interpretations
7 and less	53.9	Limited knowledge
8 – 10	45.3	Satisfactory knowledge
11	0.8	Adequate knowledge

4.7 CORRELATION OF DEMOGRAPHIC VARIABLES AND LEVEL OF NUTRITION KNOWLEDGE

The demographic variables selected to correlate with the level of nutrition knowledge of home-based caregivers are marital status, educational level, qualification, trained on nutrition and number of years of HBC experience.

4.7.1 Correlation of marital status and level of nutrition knowledge

The chi-square test was performed to determine the relationship between marital status and level of nutrition knowledge. The chi-square was 4.37 with a p-value of 0.36. This showed that there was no correlation between marital status and level of nutrition knowledge of home-based caregivers. Table 4.9 indicates the information for cross tabulation of marital status and the level of nutrition knowledge of home-based caregivers.

Table 4.9: Cross tabulation of marital status and level of nutrition knowledge

Marital status	Limited knowledge (%)	Satisfactory knowledge (%)	Adequate knowledge (%)
Married/living together	32.8	28.1	0
Single	18.8	17.2	0.8
Divorced/widow	2.4	0	0

4.7.2 Correlation of educational level and level of nutrition knowledge

The chi-square test was performed to determine the relationship between educational level and level of nutrition knowledge. The chi-square was 12.33 with a p-value of 0.06. This showed that there was no correlation between educational level and level of nutrition knowledge of home-based caregivers. The chi-square of home-based caregivers who had qualification was 3.58 with a p-value of 0.17 and this showed that there was no correlation. The chi-square of

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home-based caregivers who were trained on nutrition was 3.02 with a p-value of 0.22. This showed that there was no correlation between training on nutrition and the level of nutrition knowledge of home-based caregivers. Table 4.10 indicates the information for cross tabulation of educational level and level of nutrition knowledge of home-based caregivers.

Table 4.10: Cross tabulation of educational qualification and level of nutrition knowledge

Educational qualification	Limited knowledge (%)	Satisfactory knowledge (%)	Adequate knowledge (%)
Educational level			
Never attended	3.1	0	0
Primary	8.6	1.6	0
Secondary	35.9	32.0	0.8
Tertiary	6.3	11.7	0
Had qualification			
Yes	9.4	14.1	0
No	44.5	31.3	0.8
Trained on nutrition			
Yes	49.2	44.5	0.8
No	4.7	0.8	0

4.7.3 Correlation of HBC experiences and level of nutrition knowledge

The chi-square test was performed to determine the relationship between the number of years of HBC experience and level of nutrition knowledge of home-based caregivers. The chi-square was 1.47 with a p-value of 0.83 and this showed that there was no correlation. Table 4.11 indicates the information for cross tabulation of years of HBC experience and the level of nutrition knowledge of home-based caregivers.

Table 4.11: Cross tabulation of HBC experiences and level of nutrition knowledge

Years of HBC experience	Limited knowledge (%)	Satisfactory knowledge (%)	Adequate knowledge (%)
1 – 5 years	10.2	8.6	0
6 – 10 years	35.9	27.3	0.8
Above10 years	7.8	9.4	0

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4.8 NUTRITION CARE PRACTICES OBTAINED THROUGH FOCUS GROUP DISCUSSION

The researcher conducted focus group discussions with home-based caregivers to obtain their nutrition care practices. The results are based on 92 home-based caregivers who participated. The information would be grouped according to similar themes.

4.8.1 TRAINING RECEIVED BY HOME-BASED CAREGIVERS

On the training, all home-based caregivers reported that they received a 59-days training and three year Ancillary Health Care course from level 1 to 4 that was offered by the Department of Health. The content covered included food groups, management of different types of diseases such as hypertension, diabetes Mellitus, HIV and AIDS and TB, first aid, use of road to health booklet (RtHB), breastfeeding, bed making, caring for clients and HBC services. These two training were reported to be conducted by nurses while home-based caregivers of agency 3 indicated that they do not know the professions of people who were training them. Home-based caregivers of agency 2 indicated that they also received some of the above mentioned content from the training that they attended at William Eadie Health Center for two days and at Tshilidzini hospital for one week. In addition, home-based caregivers of agency 1 indicated that they were trained for 2-days on infant and young child feeding (IYCF) and for one-day on care for patient by Salvation Army Church.

Home-based caregivers of agency 4 indicated that when they were working from the clinic, nurses trained them on wound dressing, measuring vital signs such as temperature, blood pressure and weight, caring for patients and administering pain killers to patients. Furthermore, agency 4 received one-day training workshop offered by different organisations. One stop Center offered training on Food groups and Child Care Forum offered training on caring for orphans and abused children. The last training on development of food like peanut butter was offered by elderly people of the community Care Group, which no longer existed during the time of this study. Every Friday all home-based caregivers of agency 4 reported that they do revision that was facilitated by their coordinators and new home-based caregivers were taught about HBC services before they are sent for the 59-days training.

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Home-based caregivers of agency 5 and 7 indicated that they received training on TB, sexually transmitted infections, HIV and AIDS and the prevention of mother to child transmission (PMTCT) offered by Health and Welfare Sector Education and Training Authority (HWSETA) and TB Free NGO for one week. All home-based caregivers of agency 1 indicated that they were trained for one-day on HIV and AIDS by Rixile Youth Development Agency and two of them also received a 5-days training about TB from Nelson Mandela Foundation.

Other trainings that agency 1, 2, 7 and 8 received were about depression for one day by CPC, wound care by Hydrotex Company, early child development and first aid by Department of Labour. Home-based caregivers of agency 8 further indicated that they received training on rape that was offered by Phelotha Company. Home-based caregivers of agency 6 indicated that during women gatherings at the church, they educate each other about different information, for example fortification. Home-based caregivers of agency 5 indicated that they were taught about fortification for one day at the clinic by a nutritionist.

4.8.2 CONTINUOUS EDUCATION AND SKILLS DEVELOPMENT OF HOME-BASED CAREGIVERS

All home-based caregivers indicated that the trainings they received were not enough to keep them updated with current information especially on nutrition because they received nutrition information when being trained on chronic diseases, HIV and AIDS, TB and infant feeding. Therefore, home-based caregivers suggested that refresher courses more often would keep them up to date. Moreover, home-based caregivers indicated that it would improve their nutrition knowledge if they were trained on nutrition by nutrition professionals or experts from the Department of Health or the University. Home-based caregivers of agency 3 reported that this would make them to be more confident when answering nutrition questions asked by their clients.

Home-based caregivers of agency 4 recommended that they should all receive the same training rather than to be trained by their counterparts. Home-based caregivers of agency 5 indicated that it would be better if they were trained on

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how to measure blood pressure and given blood pressure monitors to measure their clients while at home or before they are referred to the clinic.

Home-based caregivers of agency 3 and 6 reported that they were not motivated with what they did because there was no promotion even after training. Home-based caregivers of these two agencies further indicated that if they could be promoted to work at the health institutions upon completion of Ancillary Health Care training and get employer benefits it would make a difference in their roles and people would be motivated to become home-based caregivers as well. Home-based caregivers of agency 3 reported that they would be more motivated if they are to be given certificates of the training they received. Home-based caregivers of agency 3 and 8 indicated that the construction of clinics at each village and HBC offices respectively would improve their services. In addition to improving HBC services, home-based caregivers of agency 1 reported that it would be better if their clients more especially OVC and seriously ill children could get social grant and food parcels on time while agency 6 requested assistance from other agencies on how to get donations from the shops.

4.8.3 SUPPORT PROGRAMMES AVAILABLE FOR HOME-BASED CAREGIVERS

All home-based caregivers indicated that they were registered with the Department of Health. Home-based caregivers of agency 7 and 8 got support from Shoprite U-save and Spur which usually gave them food and toys while agency 2, 4 and 7 received support from the local churches. Home-based caregivers of agency 4 further indicated that they were financially sponsored by South African Lottery. Home-based caregivers of agency 5, 6 and 7 indicated that the Department of Social Development supports them by providing clients with food parcels and social grant. Home-based caregivers of agency 5 also indicated that they received training support from TB Free NGO and HWSETA while agency 7 indicated the Department of Labour and Local Government Municipality.

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4.8.4 CARE GIVEN TO CLIENTS BY HOME-BASED CAREGIVERS

Home-based caregivers explained during focus group discussions about the care given to clients during home visits and they all reported according to clients' conditions. Only home-based caregivers of agency 8 explained their activities during home visits without specifying the clients' conditions.

All home-based caregivers reported that they engaged in social conversations with clients and their families. During these engagements, home-based caregivers of agency 2 and 4 indicated that they observed the hygienic conditions of their clients, their place and assisted where necessary. Home-based caregivers of agency 4 also relied on the reports given by family members about the well-being of clients for assistance required. All home-based caregivers reported that they encouraged their clients to take treatment as prescribed without smoking and drinking and also educated them on the importance of taking treatment. However, home-based caregivers of agency 2 showed the difficulty of working with clients who did not reveal their status because they could not monitor the clients' treatment accordingly.

Home-based caregivers of agency 8 reported that they assisted their clients with cleaning, bathing, washing, feeding and administering medication only if they were given permission to do so by clients and/or family members. In addition, agency 5 and 8 indicated that they demonstrate to family members on how to care for clients, for them to learn and assist in their absence. Home-based caregivers of agency 1 indicated that having prayer sessions before and after working gave their clients and families more strengths and hope of getting healed. The care given to clients as per condition is explained below.

- **Mentally ill clients**

Home-based caregivers of agency 3 and 6 reported that they prepare meals for their mentally ill clients especially when family members were committed, feed those who cannot feed themselves and administer medication thereafter as well as to bath their clients with assistance from family members. In the case of a child, home-based caregivers of agency 6 gave advice to a mother on how to care for the child.

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➢ **Clients living alone**

For clients who live alone, home-based caregivers of agency 4 indicated that they call client's neighbours to accompany them. Home-based caregivers of agency 4 and 6 reported that they prepare meals for their clients, give them medication after eating or injection in case of diabetic clients, prepare water for bathing and clean the house. Home-based caregivers of agency 8 indicated that they usually visit their clients three times per day and also collect pills from the clinic on behalf of elderly clients who cannot go to the clinic due to long distances whereas, home-based caregivers of agency 6 visit twice in the morning before they go to the office and in the afternoon.

➢ **Bed bound clients**

Home-based caregivers of agency 1 and 2 indicated that they bath, feed and administer treatment for bed bound clients. Feeding was also explained by home-based caregivers of agency 4, 5 and 7 while cleaning, cooking and bathing were indicated by home-based caregivers of agency 3, 4 and 7 respectively. Home-based caregivers of agency 2, 3 and 5 reported that they educate family members on how to care for these clients. A quote from home-based caregiver of agency 3 stated *"I advise family members on how to bath clients, to give them enough food, and to make sure that they give medication as prescribed and also to feed them if necessary as well as to clean client's room".* Home-based caregivers of agency 4 indicated that they also provide pampers and gloves to the families of these clients so that they take good care of the clients.

Female home-based caregivers of agency 1 indicated that they ask for assistance from their male counterpart when they encountered a male client who needs assistance with bathing while home-based caregivers of agency 7 indicated that they assisted their male client on his approval. Home-based caregivers of agency 4 reported that they give counseling to family members if the condition of clients get worse and families are no longer coping with the situation. Furthermore, in case clients have to be taken to hospital, one of the family members has to call an ambulance and accompany clients to hospital because they are not allowed to do so as they do not want to be accountable if things go wrong.

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➢ **Clients with chronic diseases**

All home-based caregivers indicated that most of their chronic clients were able to take care of themselves. However, home-based caregivers of agency 2 and 4 reported that they clean for those who are very sick and home-based caregivers of agency 6 accompanied them to the clinic when the conditions get worse.

Home-based caregivers of agency 4 indicated that they advised clients suffering from hypertension and diabetes mellitus to reduce the consumption of fatty foods, to avoid sour porridge made from home pounded maize as well as salty and sugary foods. These foods were said to increase blood pressure. Other aspects that increased blood pressure were stress and inhalation of floor polish and this is according to home-based caregivers of agency 2 and 4 respectively. Home-based caregivers of agency 1 and 4 explained that these clients were advised to eat vegetables and fruits; non-fatty food by removing visible fats from meat, skin from chicken and using lite margarine; unsalted and non-sugary foods. Home-based caregivers of agency 7 reported that they advised their diabetic clients to carry sweets wherever they are at all times and to inject themselves on time.

Home-based caregivers of agency 6 and 7 indicated that they advised their epileptic and asthmatic clients respectively to stay away from fire. Home-based caregivers of agency 7 further indicated that asthmatic clients were advised to carry spray at all times whereas home-based caregivers of agency 2 give them treatment if was not taken when they arrive. Home-based caregivers of agency 2 allowed clients to confess their problems and give counseling thereafter as well as to educate them and their family members about the condition

➢ **Clients with communicable diseases**

Clients with communicable diseases that were reported were those suffering from TB and HIV and AIDS. Some of these clients were reported to be able to take care of themselves while some were not. For clients who can take care of themselves, home-based caregivers of agency 6 indicated that they encouraged them to take treatment as recommended and agency 4 counted clients' pills to verify whether they were taking treatment or not. Of the clients who could not

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care for themselves, home-based caregivers of agencies 2, 5 and 7 reported that they prepared meals more especially soft porridge or any available foods for clients to eat before they were given treatment while home-based caregivers of agency 5 also assisted them with bathing.

Home-based caregivers of agencies 5 and 7 reported that they encouraged their clients to respect the time of taking treatment while those of agency 4 educated them on the importance of taking medication, sign and symptoms of TB. Home-based caregivers of agencies 2 and 7 reported that these clients were advised to consume vegetables and fruits for at least three times per day and to quit smoking and drinking alcohol. Clients who were stressed were given counseling by home-based caregivers of agency 7. One of the home-based caregivers of agency 4 said *"it is our responsibility to make sure that our clients are well cared for every time since TB infection can be worsen or caused by living in a poor environmental condition".*

➢ **Orphaned and vulnerable children**

Only home-based caregivers of agency 2 reported the services offered to OVC during home visits. These home-based caregivers assisted them with cleaning and cooking if there were no prepared foods in the house. One home-based caregiver said *"when I don't want to waste time I cook from my home using my food because children I care for are my relatives and I do so while waiting for help from the government".* Home-based caregivers of agency 4 reported that they prepared ORS for children suffering from diarrhea and ensured that they drank it completely.

4.8.5 NUTRITION EDUCATION GIVEN TO CLIENTS BY HOME-BASED CAREGIVERS

Home-based caregivers were asked to explain nutrition information that they gave to their clients. Home-based caregivers of agencies 2, 3, 6 and 8 indicated that they assessed the client's condition before giving nutrition advices. For example, in case clients suffer from dried skin and underweight, they were advised to eat fatty food like eggs and milk to gain weight. Moreover, clients and their families were advised to buy enough food. Home-based caregivers reported that some of the clients from families of good socio-economic status

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were not given proper care while other clients practiced what they were taught to eat and do.

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Home-based caregivers of agency 4 reported that irrespective of the clients' conditions, they have a list of topics scheduled for education on a daily basis during home visits. The topics that were mentioned are hypertension, diabetes mellitus and heart disease, HIV and AIDS and TB. However, they further reported that they emphasised more about eating habits when the clients were suffering from the disease which was the lesson of the day. Home-based caregivers of agency 7 indicated that they focused more on the causes, sign, symptoms and management of the diseases. In addition of the topics above, home-based caregivers of agency 6 indicated malaria and physical activity while agency 3 included sexually transmitted infections and the use of condoms targeting youth.

Home-based caregivers of agencies 3, 5, 6, 7 and 8 taught their clients about eating a balanced diet or nutritious meal. The information that was given to clients included the consumption of vegetables and fruits in every meals and a variety of foods and the reason given was for clients to get sufficient nutrients as one food cannot provide all nutrients. Home-based caregivers of agencies 3 and 6 further indicated that including foods like mopani worms, eggs, milk, fish and meat in a meal help to build the body while eating different fruits everyday boost the immune system and protect the body against diseases. Home-based caregivers of agency 7 further reported that clients were also advised to use soup in place of meat as it is affordable.

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Only home-based caregivers of agency 6 indicated that they teach their clients about fortification as most people in the community eat unfortified bread because fortified bread (Sasko bread was given as an example) was said to be expensive. In addition, home-based caregivers advised their clients to buy fortified bread once in a while when they have money. When the researcher asked about the nutrients that were added, one home-based caregiver said *"I don't know the nutrients that were added but I know that they are there"*. One of the home-based caregivers of agency 3 indicated that starchy food protects the body against diseases and another one from the same agency disagreed by

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saying *"starch gives energy as it contained carbohydrate and is obtained from maize meal".*

One home-based caregiver from agencies 7 and 8 said *"we encouraged our clients to prepare indigenous dishes like traditional samp or bean/nuts dish (tihove/tshidzimba) and pumpkin dish (tshopi/thopi) because they are cheap, easily accessible and healthy and also build the body and protect the body against diseases".* Clients of agencies 3 and 6 were taught to include indigenous fruits and vegetables in their meal when available in season. Indigenous vegetables and fruits that were mentioned were *Corcus hirstirus/tridens/jute plant (guxe), Amaranthus thunbergii/small pig weed (thyeka), Curcumis hirtsulus/pumpkin leaves (xiphaswi), Bidens pilosa (muxiji), Solanum nigrum/night shave leaves (muphye/muxe), Spider flower (bangala/murudi), dried cowpea leaves with ground nuts (xiridzani/dovhi), Carisa grandflora/natal plum (chugulu/thungulu), Dospyros Mespiliformis Hochest (ntoma/tsuma), Berchemia diclolour (nyiri/nii) and ficus sycamores/fig (nkuwa) and termites* were also indicated as part of indigenous foods. One of home-based caregivers of agency 5 said *"in our village indigenous foods are available but clients do not have access to it because people have demarcated the bush for their own plantation. As a result clients only had access to vegetables and fruits that are available at their homes".* Home-based caregivers of agency 4 reported that they advised people who cared for children to add peanuts, peanut butter or margarine when preparing soft porridge to boost the body.

Home-based caregivers of agencies 2 and 7 indicated that they promote the consumption of fresh green leafy vegetables as it has more nutrients than dried vegetables and fruits. Agency 7 further indicated that the consumption of dried fruits and vegetables causes scurvy (*nombe)*, which is incorrect. Home-based caregivers of agency 5 reported their concern that the village is rich in fruits and vegetables and people use them for commercial purposes and they usually advise them to use some for consumption on a daily basis in order to improve their health and nutritional status.

One home-based caregivers of agency 3 said *"the amount of nutrients in food depends on the type of food. For example, in fruits juice the nutrients that are*

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responsible for body building are in low amounts while those for protection against diseases are in high amounts. Fruits and vegetables are responsible for protecting the body against diseases as they have vitamins such as vitamin B1". Home-based caregivers of agencies 3, 4 and 8 advised their clients to start vegetable gardens and plough spinach, tomatoes, carrots and fruits in season for easy accessibility of these foods and to save money as well as to boost their immune system and to protect their bodies against diseases. Home-based caregivers of agency 5 reported that they also educated their clients on the preparatory method of vegetables. These clients were advised to wash vegetables before cooking and to avoid the use of bicarbonate of soda as it destroys nutrients.

Home-based caregivers of agencies 7 and 8 reported that there are some of their clients who did not have food to eat and ended up eating salt solution with porridge. Home-based caregivers indicated that they educated these clients about the effects of salt solution to the body as it was not of any nutritional value and advised them to start small home vegetable gardens. Clients who were suffering from hypertension were advised to reduce the consumption of salt by home-based caregivers of agency 6. One of the home-based caregivers of agency 4 said *"we advised our clients to drink water regularly for proper digestion and to take treatment after eating so they are not condemned by the medication".*

During the discussions with home-based caregivers of agencies 5 and 8, clients were advised to reduce the consumption of fat by removing visible fats from meat and adding little during cooking. They indicated that fats put pressure on the heart and make it difficult to pump blood to all parts of the body, resulting in other chronic diseases such as high blood pressure.

Elderly women who were looking after bottle-fed babies were educated on the preparatory methods of formula milk and safe precaution to follow by home-based caregivers of agency 6. They were advised to sterilize a bottle by putting it in hot water with soap for a period of time. Home-based caregivers of agencies 3, 5 and 7 indicated that their clients were also taught about environmental hygiene while agencies 3 and 6 taught about food and personal hygiene. Some

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of the information that was mentioned by home-based caregivers was to put soap and water near the toilet for people to wash hands to prevent germs.

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4.8.6 ASSISTANCE TO CLIENTS WHO LACK BASIC NEEDS

The researcher asked home-based caregivers about the assistance given to clients who lack basic needs such as food, shelter and clothes and the responses were reported according to the items. All home-based caregivers reported that assistance usually took longer due to a long list of clients who need help from different villages.

4.8.6.1 Food

All agencies except agency 7 indicated that they refer clients without food to the Social Workers at the Department of Social Development for social grant and food parcels whereas agency 7 refer them to Community Development Workers (CDWs) and village Counselor. Home-based caregivers of agency 6 reported that poor children from the village were referred to drop-in center for free meal after school and assistance with home works and to engage children on different activities. In addition some of these children were given food packs for supper at home. Drop-in center of agency 3 was no longer functioning at the time of this study. Home-based caregivers of agency 6 further indicated that they alert their managers and coordinators about clients' situation for further assessment before referral is done.

Home-based caregivers of agencies 4, 7 and 8 indicated that when clients were awaiting food parcels, they asked for donations from community members and local churches while home-based caregivers of agency 6 advised their clients to start vegetable gardens and to have fields to plough maize during rainy season. In addition, home-based caregivers of agencies 1, 4, and 5 indicated that they usually buy food for their clients to eat for one day especially if there were no family members to assist. Home-based caregivers of agency 5 also indicated that they requested a motivational letter from the Chief for donation from the local shops while agency 1 indicated that they get donation from a local Shoprite U-Save every now and then.

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4.8.6.2 Shelter

Home-based caregivers of agencies 1, 3, 4 and 7 indicated that clients without houses are referred to CDWs. Those from agency 1 also indicated that CDWs always request home-based caregivers to provide them with statistics of clients without houses. Home-based caregivers of agencies 1, 2, 5, 7 and 8 referred clients to the Chiefs/Counselors so they are listed for reconstruction development programme (RDP) houses at the municipality. Home-based caregivers of agency 2 also referred these clients to Social Workers at the Department of Social Development. Of all the focus groups conducted, only home-based caregivers of agencies 4 and 6 indicated that they had not encountered clients without houses. However, those from agency 4 indicated that in case family houses are burnt down they receive a tent as a temporary shelter while waiting for an RDP house that may take time to be built.

4.8.6.3 Clothes

When home-based caregivers were asked about the assistance given to clients without clothes, those from agencies 1, 2, 3, 4 and 8 indicated that they referred these clients to Social Workers while agency 7 referred them to CDWs and alerted the Counselor about the situation to inform community members for contribution. Home-based caregivers of agencies 1, 5, 6, 7 and 8 also requested community members and local churches to donate clothes to the agencies so that they distribute to clients in need.

4.8.7 CHALLENGES EXPERIENCED BY HOME-BASED CAREGIVERS

Home-based caregivers (n=92) were asked during focus group discussions to outline the challenges that they encountered on a day-to-day basis that hinder their services. The following challenges were indicated:

- Agencies 1, 3, 4, 6 and 8 indicated that they sometimes felt not welcomed during home visits because family members were not cooperative. They do not give them time to listen to the lessons and elderly people are usually reluctant to HIV and AIDS lessons as they say is not relevant for them.
- Agencies 3, 4, 6, 7 and 8 indicated that clients demand medication and social grants or money to buy food that they are taught about.

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- Agencies 1, 5, 7 and 8 indicated that family members do not take good care of their clients and some even took their pension grants more particularly for elders and mentally ill clients.
- Agencies 1, 6, 7 and 8 indicated that some clients did not adhere to their treatment and diet, which posed more risk to their conditions and these make home-based caregivers to feel as if they were not giving them proper advice.
- Agencies 2, 4 and 7 reported that is a serious challenge to give nutrition education to poor families because they feel like family members will be offended since home-based caregivers know that clients cannot afford to buy food.
- Agencies 2, 3 and 7 indicated the difficulty of working with clients who are not disclosing their health status because they do not know how to monitor their treatment.
- Agencies 3 and 4 indicated that there were some clients who did not want to go for checkup because there are no health facilities nearby and they cannot afford funding for transport.
- Agency 7 indicated that some clients do not want to be visited by home-based caregivers in a uniform because they think people may say they are HIV positive.
- Agency 8 indicated the difficulty of assisting clients without knowing their relatives.
- Agency 6 reported that they are not trained on nutrition as a standing item. They only get information on nutrition information from other training and it is difficult for them to respond to their clients when they asked nutrition related questions.

4.9 NUTRITION CARE PRACTICES OBTAINED THROUGH OBSERVATION

Nutrition care practices of home-based caregivers were also obtained through observation during home visits (n=28). The aspects that the researcher focused on were nutritional care practices that home-based caregivers provide to their clients. These practices included personal hygiene of home-based caregivers when caring for clients, hygiene practices in food handling, environmental hygiene as well as the provision of nutrition education.

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The number of clients visited ranged from one to five per home-based caregiver. Home-based caregivers who were doing home visits in a group of two or three visited less number of clients per day as compared to those who were alone. The number of clients visited per day ranged from one to three for group visits and four to five for individual visits.

The researcher identified that the time spent by home-based caregivers differ from one client to the other depending on the conditions to be cared for. Time spent ranged from 30 to 90 minutes per visit.

Clients visited (n=65) were suffering from chronic diseases such as hypertension, diabetes mellitus, stroke and arthritis, communicable diseases such as HIV and AIDS and TB, disability, mental illness as well as those who were living alone and H-name clients. H-name clients refers to the households where there were no specific clients targeted for; but were visited to give nutrition education to all family members and to assist where necessary. The following sections will focus on the care practices observed from clients according to various categories, nutrition education given to clients and other observations.

4.9.1 Clients of category one

Clients under category one were able to carry out all the activities by themselves and they could not be found at home during the time of the visits. Twenty-nine clients were visited, of which 25 also received assistance from family members or domestic workers and four clients were living alone. The observation made by the researcher was when home-based caregivers were giving nutrition education to their clients and family members. Home-based caregivers were also observed advising clients on how to take care of the environmental hygiene. For example, clients were advised to dig a dumping hole and burn plastic and other burning materials.

4.9.2 Clients of category two

Clients under category two were able to take care of themselves and needed extra care from other people and were always found at home during the time of home visits unless they went for medical checkups. Twenty-three clients were

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visited of which two were living alone and 21 received extra care from family members or domestic workers. One of the three home-based caregivers who were doing home visit together was observed preparing food for the client. The researcher observed that the home-based caregiver washed her hands with soap and rinsed utensils before cooking but her head was not covered. During observations the researcher also realised that home-based caregivers just promised their clients that they will wash and clean for them during the next visit.

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4.9.3 Clients of category three

Clients under category three were bed bound and disabled and relied on other people for care. Thirteen clients of this category were visited. The researcher made the following observations:

- One client suffering from stroke was assisted with exercise by home-based caregivers. They were using fist ball and also demonstrating to family members on how to assist their client. Home-based caregivers did not wash their hands before and after caring for a client. A client was also given pampers (a disposable nappy).
- Home-based caregivers assisted disabled children to walk using a walking stick and to write and they also played with these clients.
- A bed bound client was assisted with bathing, cleaning both the house and the yard and washing clothes and blankets for the whole family. Home-based caregivers washed their hands before and after caring for client and they were wearing gloves when performing all these activities. Caregivers wanted to cook soft porridge for this client but there were no foods available in the house. Moreover, police officers were informed of the situation since a client was refusing to be transferred to hospital and they were also requested to contact the hospital.
- During home visits of these clients, the researcher also observed that some home-based caregivers relied on the information given by family members about the well-being of their clients without seeing them.

4.9.4 Nutrition education given to clients

Nutrition education was given to clients and other family members. Of the 65 clients visited, only 20 clients and their families were given health and nutrition education. Agency 4 had a weekly schedule for the lessons to be given on a

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daily basis during home visits whereas this was not the same in other agencies. The researcher observed that home-based caregivers of other agencies gave education based on the conditions of their clients and not all covered nutrition information. Of the topics indicated below the researcher explained nutrition information covered by home-based caregivers during home-visits.

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- **HIV and AIDS**

Information that was taught about HIV and AIDS included causes, signs and symptoms, medical management and eating habits. Clients who were educated were those infected and affected by HIV and AIDS as well as clients suffering from hypertension, diabetes mellitus, stroke and mental illness. About eating habits, home-based caregivers indicated that HIV and AIDS clients have to eat a variety of foods, to add more fat during cooking and to consume meat along with indigenous vegetables and fruits in order to maintain adequate body mass index. In addition, the consumption of vegetables and fruits helps to strengthen the immune system for HIV and AIDS clients to feel strong. Some clients were advised to eat a lot when they have appetite, to take oral rehydration solution when they have diarrhea and drink lots of water. During the lesson, home-based caregivers also indicated that mealie meal assists with digestion.

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- **TB**

Clients with TB, hypertension, diabetes mellitus and disability together with their families as well as H-name clients were educated about TB. Information given includes causes, signs and symptoms, treatment, safety precaution to be taken to prevent the transmission and eating habits. As part of eating habits home-based caregivers indicated the importance of vegetables and fruits and encouraged them to eat especially the one in season as they are cheap and easily accessible. They also encouraged people to consume a variety of foods to make a balanced diet and to reduce fat intake as well as to drink a lot of water. Some of the home-based caregivers did not cover nutrition information when giving a lesson about TB.

- **Diabetes mellitus**

Education about diabetes mellitus was given to clients suffering from stroke and their family members. Home-based caregivers were in a group of three and one

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was giving education while the other two provided additional information at the end of a lesson. The information covered the definition of diabetes, causes and symptoms. Family members were also advised to go for testing if they suspected any signs of diabetes mellitus. When giving education home-based caregivers indicated that porridge from home grounded maize meal (*xibasa)* has more starch than sour porridge so it has to be eaten in small amount as it increases blood sugar level.

The following additional nutrition information was given to clients and their family members by home-based caregivers:

- They were advised to make vegetable gardens as part of their physical activity and to be able to access vegetables easily. Clients who did not have access to clean water at all times were advised to use water from bathing and laundry to water their plants.
- Clients who were suffering from arthritis were advised to avoid the consumption of red meat with the reason that it worsens the condition.
- Clients suffering from obesity and hypertension were advised to engage in household chores as part of physical activities to be able to manage their conditions.
- A breastfeeding mother was advised to exclusively breastfeed for six months highlighting that its significance for growth and development of the baby as well as the importance of eating enough nutritious food to provide for the baby.

4.9.5 Other observations made on all clients

To verify that HIV positive clients were taking their treatment, home-based caregivers only counted their pills. The clients who were not complying with their treatment were referred to the researcher for some advice. Other home-based caregivers requested medical reports from clients who were referred to hospital in order to assist them with their treatments.

The researcher observed that some home-based caregivers requested permission from their clients and/or family members to work with them and have a prayer session before and after working. Other home-based caregivers spent

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more time on social conversation with their clients or family members. Before home-based caregivers left the home, clients or any other family member were given a register to sign.

4.10 RELATIONSHIP BETWEEN NUTRITION KNOWLEDGE AND CARE PRACTICES OF HOME-BASED CAREGIVERS

The results of the relationship between nutrition knowledge and care practices are based on the 28 home-based caregivers who did home visits with the researcher. Of these home-based caregivers, 12 had limited knowledge, 16 had satisfactory knowledge and none had adequate knowledge. With regard to the clients visited, only 20 out of 65 (30.8%) were given nutrition education or were advised based on their conditions.

The study determined the relationship of nutrition knowledge and care practices based on the knowledge test statements and the nutrition information that was delivered to clients during home visits. Four of the knowledge test statements were shared with clients but the information was not much detailed to give clear understanding of the subject matter to clients. The information given includes starchy food, fat intake, frequency consumption of vegetables and fruits and the preparation of ORS. Additional information was also given as part of the nutrition education.

All clients and their families were taught to consume a variety of foods in order to maintain the required balanced diet and to get all the nutrients that the body needs. Some of the clients infected and affected with HIV and AIDS and TB were taught to include high amounts of fat in their diet to regain weight while others were advised to reduce its consumption. PLWHA who experienced diarrhea were advised to drink ORS or a lot of water more often and to eat a lot when appetite had increased. To reduce the cost and increase availability and accessibility of vegetables and fruits, clients were taught about the initiation of home vegetable garden which was said it also forms part of physical activities. Clients were also advised to do household chores as part of their physical activities.

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Furthermore, clients who were suffering from arthritis were just advised to avoid the intake of red meat because it worsens the condition. Mothers with new born babies were taught about breastfeeding and were advised to exclusively breastfeed for the first six months of life. Home-based caregivers emphasised the importance of breastfeeding to mothers. They indicated that it is good for growth and development of the baby and mothers can provide the baby with all nutrients provided they are eating enough nutritious meal. Moreover, clients were taught that mealie meal assists with digestion. With regard to fortification, clients were advised to eat Sasko bread to get fortified nutrients since home-based caregivers believed it is the only bread that has been fortified.

4.11 FACTORS THAT INFLUENCE NUTRITION KNOWLEDGE OF HOME-BASED CAREGIVERS

This study attempted to find a relationship between socio-demographic parameters and the level of nutrition knowledge of home-based caregivers. The study used the chi-square test to determine the influence of socio-demographic variables on nutrition knowledge of home-based caregivers. The results showed that marital status ($x^2 = 4.37$, $p = 0.36$), educational level ($x^2 = 12.33$, $p = 0.06$), qualification ($x^2 = 3.58$, $p = 0.17$), training on nutrition ($x^2 = 3.02$, $p = 0.22$) and years of HBC experience ($x^2 = 1.47$, $p = 0.83$) were not significant factors. Gender was not used as most of the home-based caregivers were women.

From the above information, the study found that neither marital status, educational level, formal qualification, training on nutrition nor years of HBC experiences had an influence on the level of nutrition knowledge of home-based caregivers. The chi-square of the five socio-demographic variables was more than 0.05 when compared with the level of nutrition knowledge, which indicates that there is no relationship between the variables.

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CHAPTER FIVE

DISCUSSION OF THE RESULTS

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5.1 INTRODUCTION

The aim of the study was to determine nutrition knowledge and care practices of home-based caregivers in Vhembe District. In this chapter the results of the study will be discussed in relation to known literature. However, very few studies have been conducted on nutrition knowledge and care practices of home-based caregivers. Therefore, the discussion is limited to few studies reviewed under chapter 2.

5.2 SOCIO-DEMOGRAPHIC INFORMATION

The areas in which the eight agencies operate are rural based. The villages are characterised by poor infrastructure such as housing, water supply and roads. Poor roads in some of the villages and limited public transport make access of clients to health institutions difficult, especially in rainy weather. Only two of the agencies were operating in areas with tarred road and access to public transport.

Home-based care services are usually done by women because they are socialised to be caregivers. The current study found that almost all (99.2%) home-based caregivers were women and 84.3% were aged 30 to 50 years. Akintola (2004) indicated that in South Africa home-based caregivers are usually women and young girls mainly due to their traditional role. Home-based caregivers of all NGOs or non-profit organisations (NPOs) such as Thembalethu HBC, CPC and Zululand Hospice were mainly matured women (Rendall-Mkosi and Phohole, 2005). Less involvement of men in HBC programmes were also observed in Zimbabwe (SAfAIDS and HDN, 2007). From all these studies women are likely to volunteer than men since home-based care was initially a voluntary work and men are not likely to work for free.

Home-based caregivers are given a stipend on a monthly basis and it differs between agencies or hospices. In the current study all home-based caregivers were paid a stipend of R1411.80 per month while one agency had an additional amount of R1000.00 for each caregiver from South African lottery. Moetlo *et al.*

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(2011) indicated that home-based caregivers are paid R500.00 to R1000.00 in Vhembe District. The DoH (2002) indicated that home-based caregivers of one agency were paid R1200.00 and this amount increased to R1500.00 after three months with a 10% annual increment while from another agency they were paid R1750.00 per month with an additional R250.00 travel allowance. Home-based caregivers of Thembalethu HBC in Mpumalanga, CPC in Limpopo and Zululand Hospice in KZN were given a stipend of R250.00, R300.00 and R1200.00 per month, respectively (Rendall-Mkosi and Phohole, 2005). South African health ministry spokesman, Sibani Mngadi encouraged unemployed people from poverty-stricken or AIDS-affected households to volunteer since they are paid a stipend of R1000.00 a month in other provinces while in Kwazulu-Natal they were paid R1700.00 (Plusnews, 2005). This amount is too little for males to work for the entire month; hence there is low participation of males in HBC programmes. From this information, there is no equity of the amount given to home-based caregivers while they are providing the same services.

In the current study, 68.7% of home-based caregivers had secondary and 18% had tertiary qualifications. The other study conducted in Vhembe District showed that 77% had secondary education with 10% in possession of tertiary qualifications (Moetlo *et al.*, 2011). Similar findings were also reported in Namibia where 66.7% of home-based caregivers had secondary education and 10.3% had tertiary qualifications (Niikondo *et al.*, 2011). From all these studies, most of the home-based caregivers had completed matric and those with formal qualifications were willing to work for HBC due to lack of employment.

More than half (64.1%) of home-based caregivers in the study had six to 10 years of HBC experience. In the study of Niikondo *et al.* (2011), only 31.3% had six to 10 years of experience. Irrespective of the number of years working for HBC, the researcher did not observe any difference with regard to services rendered.

5.3 TRAINING RECEIVED BY HOME-BASED CAREGIVERS

The initial training that is provided to home-based caregivers is 59 days which is offered using the National Department of Health manual (DoH, 2001[a]). All home-based caregivers of the present study received such training which is similar to

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the study done by Rendall-Mkosi and Phohole (2005) of CPC in Vhembe District and Zululand Hospice in KwaZulu Natal. In contrast, Rendall-Mkosi and Phohole (2005) indicated that home-based caregivers of Thembalethu HBC in Mpumalanga received five days initial training with a further five days training based at the local hospital. Thembalethu Home-based care has developed their own manual version based on few different curricula including the National Department of Health. CPC is accredited by HWSETA to provide 59 days training.

Home-based caregivers with educational level of above grade 11 were trained on Ancillary Health Care course which was offered by Nchebeko Skills Consultancy. Nchebeko Skills Consultancy is one of the training providers contracted by the Department of Health as they have a HWSETA accredited curriculum. The Department of Health is only given a list of unit standards that contracted training providers must comply with. Similar training was given to home-based caregivers in Kwazulu-Natal from 2010 and they graduated as ancillary nurses in 2013 (Dhlomo, 2013). The study by the Health Economic and AIDS Research Division (HEARD) of the University of KwaZulu-Natal indicated that South Africa promotes volunteerism for home-based caregiver; therefore the Department of Health has to assist caregivers to ultimately obtain formal employment through the training that they received (Akintola, 2004).

Rendall-Mkosi and Phohole (2005) indicated that home-based caregivers received weekly ongoing support offered in groups by zone leaders and occasionally by coordinators and trainers or invited experts. In Zimbabwe, nutrition experts are invited to provide ongoing training on emerging nutritional issues (SAfAIDS and HDN, 2007). In the current study ongoing support was given by coordinators more especially for newly appointed home-based caregivers before they receive the initial training. Ongoing training especially on nutrition will help home-based caregivers to gain knowledge and have confidence in assisting clients with their nutritional needs.

The nutrition information received as indicated by home-based caregivers was about nutrients (86.7%), food groups (42.2%), food handling and preparation (23.4%) and nutritional management of different diseases (7.8%). Nutritional

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information was included on the National Department of Health manual (section 11) to provide home-based caregivers with knowledge of sound nutritional principles. The manual is used to provide 59-days training. However, only 94.5% indicated that they were trained on nutrition. Akintola (2004) indicated that in Uganda there is a training manual for home-based caregivers that focuses mainly on nutritional care for PLWHA. Furthermore, Akintola (2004) recommended that the training curriculum of South Africa needs to be reviewed to enable home-based caregivers to gain deeper nutritional knowledge as in Uganda. Nutrition training and support for home-based caregivers also need to be strengthened as it is pivotal to the provision of optimal nutritional care to the clients.

The training that home-based caregivers of this study received is not enough to keep them up-to-date with current nutrition information. In Zimbabwe, refresher courses were provided annually focusing on emerging issues with specialists from nutrition and other fields invited to train home-based caregivers (SAfAIDS and HDN, 2007). Furthermore, all home-based caregivers in Zimbabwe were given the same training. In contrast, in this study other training was given to coordinators and in return they were expected to train home-based caregivers of their agencies. Training on nutrition like in Zimbabwe has to be provided to all home-based caregivers to improve their knowledge and skills.

Other organisational structures that provided support to home-based caregivers were the Department of Social Development (grant and food parcel), Local shops such as Shoprite U-Save (food and toys), lottery (finance), local churches (donation of food and clothes), TB free NGO, local Government municipality with RDP houses. In Zimbabwe, HBC agencies were supported by different organisations such as Irish Aid since 2005, Catholic Relief Services (CRS), Bernard Van Leer Foundation, United States Agency for International Development (USAID) and Lottery amongst other support structures (SAfAIDS and HDN, 2007). The kinds of support provided include the provision of funds, uniform, training, free medical assistance to clients, seeds, certificates for home-based caregivers, stationery and bicycles for male caregivers. In view of this, suffice to say different agencies from different countries are supported by various organisations.

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5.4 NUTRITION KNOWLEDGE OF HOME-BASED CAREGIVERS

Nutrition knowledge of home-based caregivers was assessed based on the South African FBDGs (DoH, 2004) and a learner handbook for the training of home-/community-based caregivers in South Africa (DoH, 2001[a]). The study indicated that more than half (53.9%) of the home-based caregivers had limited knowledge and 45.3% had satisfactory knowledge. Only 0.8% had adequate knowledge. Adequate knowledge in this study refers to the ability of home-based caregivers to respond appropriately to all the eleven questions that were administered to assess the level of their nutrition knowledge. Similar findings were reported by Irungu *et al.* (2007) where only 3.4% of the caregivers had adequate nutrition knowledge. Home-based caregivers of Zimbabwe were knowledgeable on the nutritional need of their clients (Mapfumira and Mawarire (2013). Home-based caregivers in this study were not trained on the South African FBDGs. However, an average of 70% had given appropriate responses to questions based of FBDGs. It can be concluded that their level of nutrition knowledge is based on the training that they received, though not sufficient.

The golden rule which says, enjoy a variety of foods is the first guideline that aims to encourage people to change their diets. This is meant to ensure that people take and enjoy a variety of food as much as possible for their health benefits. (Maunder *et al.*, 2001). Nutritional needs are met by providing a variety of foods which provide carbohydrates, fats, proteins, minerals and vitamins (Bonnie and William, 2000). Home-based caregivers knew that consumption of a variety of foods assists clients to get various nutrients, good growth and development and protection against diseases among other reasons.

The guideline of starchy foods should form the basis of most meals aimed at optimal intakes of cereals and grains such as porridge, bread, rice, pasta, samp and breakfast cereals (Vorster and Nell, 2001). These examples are similar to the one indicated by 95.3% of home-based caregivers of this study. Vorster and Nell (2001) indicated that these starchy foods are available worldwide but are more, especially in developing countries. Starchy foods do not merely provide energy, but are valuable sources of micronutrients and dietary fiber when eaten in minimal processed forms (Vorster and Nell, 2001). The few who did not know

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indicated that vegetables, fruits, meat and beverages form the basis of most meals, which is incorrect. Starchy foods are a staple food in the areas where the study was conducted hence home-based caregivers were expected to be able to mention most of them.

The guidelines indicate that protein food from animal origin such as chicken, fish, meat, milk and eggs could be eaten daily, meaning eating a small portion daily. These foods are the best sources of high quality protein and excellent sources of essential micronutrients such as iron, zinc, calcium, thiamine, riboflavin and the omega-3 fatty acids that form part of a balanced diet (Scholtz *et al.*, 2001). About 76.6% of home-based caregivers advised their clients to eat animal protein foods one to three times per week because they could not afford it every day. These foods are relatively expensive when compared with plant protein foods such as legumes. Legumes are rich and economical dietary sources of good quality protein, carbohydrates, soluble and insoluble dietary fiber components and a variety of minerals and vitamins (Venter and van Eyssen, 2001). More than half of home-based caregivers (55.8%) knew that legumes contain protein and advised their clients to consume it regularly due to its affordability and health beneficial effects.

Almost all home-based caregivers (99.6%) advised their clients to eat fat sparingly or not at all when preparing vegetables. Fats provide energy and are also needed for building cells, to help body processes and to help absorption of the fat-soluble vitamins (ADEK). Therefore, it should never be completely excluded from the diet because the essential fatty acids cannot be produced by the body and have to be supplied from food (DoH, 2004). This statement contradicts the advice given to clients when preparing vegetables. A high intake of fats is associated with chronic diseases of lifestyle such as overweight, high cholesterol levels, cardiovascular heart disease, diabetes and certain cancers (DoH, 2004). This is the reason home-based caregivers of this study advise their clients to eat fat sparingly. Then home-based caregivers have to ensure that appropriate advice is given to improve health status of their clients.

Almost all home-based caregivers (97.7%) advised their clients to eat sugar sparingly, meaning very little at a time. Too much sugar can cause obesity,

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especially when eaten with fatty food, can lead to tooth decay and also make people full and results in less consumption of healthy foods such as vegetables, fruits and milk (DoH, 2004). The study reported that too much consumption of sugar may lead to loss of appetite, tooth decay and diabetes mellitus. The saying that sugar causes diabetes and heart disease has been unfairly blamed (DoH, 2004). Fruits contain natural sugar and are good sources of fiber, vitamins and minerals and consumption of fruits to get natural sugar which does not put clients at risk has been reported in the study. However, drinking too much fruit juice too often will lead to tooth decay.

Almost all home-based caregivers (98.4%) advised their clients to eat salt sparingly, meaning very little at a time. Salt intake of about 5g per day provides the daily need of iodine provided it is iodated (Charlton and Jooste, 2001). Too much consumption of salt increases the risk of high blood pressure, coronary heart diseases and stroke (DoH, 2004). In the current study, home-based caregivers indicated that too much consumption of salt leads to high blood pressure, bilharzia, edema during pregnancy, diarrhea, headache and dry mouth. Therefore, clients were advised to reduce the consumption of salt. Fewer than 5.5% of home-based caregivers still have a wrong perception that coarse salt is not iodated and they advised clients to use fine salt. This perception may be derived from the fact that many people used agricultural salt that is meant for animal nutrition and other purposes.

The guideline 'Be active' is based on the fact that physical activity lowered the risk of mortality and morbidity associated with many chronic diseases of lifestyle (Lambert *et al.*, 2001[a]). All home-based caregivers of this study knew the importance of physical activities and gave appropriate advice to their clients. The involvement of home-based caregivers to assist clients to engage in moderate physical activities for at least 30 minutes per day lowers the risk of chronic diseases. Lambert *et al.* (2001[b]) indicated that physical activity is protective for chronic diseases by lowering blood pressure and increasing high-density lipoprotein cholesterol concentrations.

Vegetables and fruits are rich sources of vitamins and minerals that protect the body against diseases. Many home-based caregivers (74.8%) indicated that

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clients were advised to consume vegetables and fruits every day but not all do follow their advice. WHO (2003[d]) recommends daily intake of five portions of vegetables and fruits (400g) per day as being protective against non-communicable diseases including cancer of the oral cavity, oesophagus, stomach and colorectum and is believed to be a protective factor against developing obesity, type-2 diabetes and cardiovascular diseases. Love and Sayed (2001) reported that the majority of South Africans do not achieve the recommended daily intake while there are wide variety of vegetables and fruits available throughout the year. Nel and Steyn (2002) indicated that the consumption among South Africans is roughly half (200g) of the recommendations made by WHO (2003[d]). From the above information there is still a challenge among South Africans to achieve the recommended intake of vegetables and fruits.

Vhembe District is one of the areas that are rich in vegetables and fruits. Low consumption may be the results of using vegetables and fruits for commercial purpose as well as demarcating the bush where there were indigenous vegetables and fruits for their own plantation. According to the South African National Health and Nutrition Examination Survey (SANHANES-1, 2013), low consumption can be attributed to many factors including poor household food security resulting from poverty. This may be due to both lack of access and the availability of vegetables and fruits in poorer communities such as informal settlements.

Balanced diet is important to improve the nutritional status of the sick people. About 89.1% of home-based caregivers had knowledge of what constitutes a balanced diet. Similar results were found in Zimbabwe and home-based caregivers also knew the dietary requirements of their clients (Mapfumira and Mawarire, 2013). Food groups are components of a balanced diet and only 43.8% managed to mention all the three groups. The researcher realised that home-based caregivers in this study had knowledge of the foods to include for a balanced diet but they are not aware of its food groups or nutritional content.

Home-based caregivers had knowledge of appropriate nutrition advice to give clients suffering from different nutrition related problems such as swallowing

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difficulties, nausea and vomiting and weight loss. On average, different appropriate advice for swallowing difficulties was given by 90.2%, for nausea and vomiting by 29.2% and for weight loss by 20.2%. Some of the responses given for clients with swallowing difficulties are similar to the one mentioned by Kenyan Ministry of Health (2002) which includes the consumption of soft, bland and not spicy food, cold food or drink to make the mouth numb and reduce pain as well as to avoid hard and crunchy food.

5.5 NUTRITION CARE PRACTICES OF HOME-BASED CAREGIVERS

The discussion of nutrition care practices is based on information obtained from focus group discussions and observations during home visits.

5.5.1 Conditions of clients

Home-based caregivers care for clients with different conditions but most of the studies that have been done focused on the care for PLWHA (Meih *et al.*, 2013; Rodlach, 2009 and Uys, 2002). The conditions of clients cared for in the present study are similar to the one mentioned by home-based caregivers in Zimbabwe (SAfAIDS and HDN, 2007). Among other conditions, the ones indicated in this study are chronic diseases of lifestyle, communicable diseases, mental illness, disability, ulcer and wounds as well as orphaned children. Rendall-Mkosi and Phohole (2005) indicated that CPC, Thembalethu HBC and Zululand Hospice cared for people infected and affected with HIV and AIDS and OVC. The conditions of clients were the same in all agencies.

The present study found that home-based caregivers get to know that people need their services through referral from the clinics, door-to-door campaigns and when informed by family members and friends and approached by clients. According to Rendall-Mkosi and Phohole (2005), home-based caregivers received referrals from the community, clinics, hospital and Social Workers. In Zimbabwe, home-based caregivers used to get referral from the hospital and through door-to-door campaigns but due to the increasing need of HBC services they were also approached by clients (SAfAIDS and HDN, 2007). Referrals from the clinics or hospitals is due to the high number of clients seeking medical services and shortage of healthcare personnel, thereby placing strains on public health services needed by clients (Aitken and Kemp, 2003).

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5.5.2 Care given to clients

In this study, a number of clients that each home-based caregiver cared for ranged from 10 to 20. At the Catholic Health Care Commission, one of the agencies in Zimbabwe, the ratio was one home-based caregiver to 10 clients (SAfAIDS and HDN, 2007). However, this ratio increased to 25 clients per home-based caregiver due to the demand of HBC services. According to Rendall-Mkosi and Phohole (2005), the ratio for Thembalethu HBC is one home-based caregiver to 15 clients. The ratio depends on the need of HBC services in different areas.

The Department of Health (2002) reported that the number of clients visited per day varies between agencies or hospices. For example, two home-based caregivers of South Coast Hospice visited eight to 12 clients per day. Home-based caregivers of this study indicated that they visited seven and/or more (19.5%), five to six (67.2%) and three to four (13.3%) clients per day. In contrast to the findings of DoH (2002), the researcher observed that home-based caregivers in groups of two or three visited one to three clients while those who were alone visited four to five clients per day. The variation may also be due to the care provided and the distance to travel from one household to the other. Campbell *et al.*, (2007) reported that home-based caregivers walk one or more hours to the house of the clients. In this study, not all home-based caregivers had to walk long distance to the house of their clients. Catholic Health Care Commission and Dananai HBC visited clients who lived alone twice per day and this practice is similar to what have been indicated by home-based caregivers of this study. In contrast, home-based caregivers in Kenya visited their clients on a weekly basis that is once per week (Irungu *et al.*, 2007).

The amount of time spent with clients depends on the conditions cared for. In the this study, 57.8% of home-based caregivers spent between 31 to 60 minutes on clients of category one and fewer than 21.1% spent more than an hour with clients of category three. According to the report by SAfAIDS and HDN (2007), home-based caregivers in Zimbabwe spent two hours or less per day with one client. The researcher observed that most of the time in this study was spent on social conversations irrespective of the conditions cared for.

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The Kenyan Ministry of Health (2002) indicated that HBC encompasses clinical care, nursing care, counseling and psycho-spiritual care and social support. This study focused on nursing care that includes care to promote and maintain good health, hygiene and nutrition of clients. The tasks of home-based caregivers among others include cooking, feeding and cleaning, bathing, wound dressing, promoting gardens, supply of medication and referring clients to other relevant services (Rendall-Mkosi and Phohole, 2005). Similar activities were also reported in this study. However, the researcher only observed few home-based caregivers assisting clients with bathing, cleaning and washing and they were wearing gloves when caring for clients. In Kenya home-based caregivers were responsible for providing environmental and personal hygiene, training family members in the homes on how to care for clients, giving nutrition education and counseling (Irungu *et al.*, 2007). The researcher observed that most of these activities were provided to clients of category three and those living alone.

Home-based caregivers of some agencies in this study indicated that they are not allowed to call an ambulance or accompany clients to hospital while others indicated that they do. The DoH (2002) and WHO (2000) showed that home-based caregivers are allowed to make arrangements to transport clients to the hospital. Home-based caregivers of Bekezela HBC project did transport clients to hospital only when they were visiting the site (SAfAIDS and HDN, 2007). Since there is discrepancy on transportation provision, home-based caregivers have to ensure that they are guided by the guidelines of the Department of Health.

Basic needs refer to the things that are necessary to sustain life such as availability of adequate food, shelter and clothes. Clients who lack basic needs in this study were referred to the Department of Social Development, CDWs, drop-in-centers and village Counselors or Chiefs. In addition, they asked donations of food and clothes from community members, local churches and local shops and also advised clients to start vegetable gardens and other plantations. Agencies in Zimbabwe provided food parcels, clothes, soap, toys and blankets as well as health and educational assistance to OVC through the

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organisations that supported them (SAfAIDS and HDN, 2007). Rendall-Mkosi and Phohole (2005) indicated that food parcel system and school feeding were not reaching those in desperate need or to be reaching them erratically. In this study, the researcher observed that most of the foods that were donated by local shops had reached expiry dates. Expired foods may end up not reaching clients in need because it is not safe for home-based caregivers to give their clients expired foods.

5.6 RELATIONSHIP BETWEEN NUTRITION KNOWLEDGE AND CARE PRACTICES OF HOME-BASED CAREGIVERS

This section discusses data on the ability of home-based caregivers to translate their nutrition knowledge to practice during home visits. Of the statements that were asked during knowledge test, clients were taught about starchy foods, fat intake, frequency consumption of vegetables and fruits and the preparation of ORS as well as the additional nutrition information that were not included on the test questions. The importance of relating nutrition knowledge of home-based caregivers and their practices is crucial in order to improve the nutritional status of their clients.

Almost all home-based caregivers (95.3%) had knowledge that starchy foods form the basis of most meals. However, clients were advised to reduce the consumption of home-grounded maize meal porridge. Home-grounded maize meal is a refined carbohydrate and has main source of starch.

For fat consumption, 100% of home-based caregivers knew that it has to be consumed sparingly and this knowledge was transferred to clients for the prevention of chronic diseases. Furthermore, those who lost weight were advised to consume more fat to regain weight or prevent further weight loss. From the observation home-based caregivers were able to use their knowledge to improve the nutrition status of their clients.

Home-based caregivers (75.8%) had knowledge on the frequency consumption of vegetables and fruits and clients were given appropriate advice. To ensure availability, accessibility and affordability, clients were advised to initiate vegetable gardens. If the good practice of home-based caregivers is to be

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followed adequately, consumption of vegetables and fruits which is important to prevent many diseases and to improve the micronutrients status of the clients will be ensured.

For the preparation of ORS, 40.6% of home-based caregivers had knowledge of the correct method to follow. In practice, clients suffering from diarrhea were advised to drink ORS and/or a lot of water. However, the preparatory method and frequency of drinking it was not quite explained to clients. Since ORS does not taste very good, clients may drink very little because its importance was not explained in detail.

Home-based caregivers had knowledge on the importance of consuming legumes (53.8%), food groups (43.8%) and its examples (energy – 75.0%, body building – 78.9% and protective – 78.1%) as well as nutritional advice for nausea and vomiting (43%). None of them educated their clients with regards to the above mentioned information during home visits. This may be due to the fact that the topics for nutrition education were given based on the conditions of clients, and some topics were not relevant.

Home-based caregivers also gave additional nutrition information to their clients. The information includes physical activity, benefits of red meat and how it has to be consumed to manage arthritis and promotion of breastfeeding. Physical activities improve one's wellness, emotional and psychological well-being as well as boosting the immune system (Insel and Roth, 2008). The DoH (2004) showed that cleaning the house, mowing the lawn and working in the garden are part of physical activities. Home-based caregivers of this study advised their clients to initiate home gardens and to do household chores as part of their physical activities. However, it was difficult for them to motivate very sick clients to engage in physical activities.

The information given to clients with arthritis about red meat was important to assist them in the management of the condition. Red meat is rich in omega-6 fatty acids which are broken down into the pro-inflammatory protein that clients with arthritis need to avoid. Pro-inflammatory proteins increase inflammation and

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make it more likely that clients with arthritis need medications (Grant-Cooper, 2008).

Home-based caregivers promote the practice of exclusive breastfeeding for the first six months to their clients. This practice is recommended by WHO (2010) and adopted by the Tshwane declaration of support for breastfeeding in South Africa (2011). Home-based caregivers may have gained breastfeeding knowledge during IYCF training and the information was transferred effectively to clients. This is important to improve the well-being of infants.

From the above information home-based caregivers did not share most of the nutrition information they said they knew with their clients. The reason may be due to limited nutrition training that they received or it could be that they had already taught them on previous occasions when the researcher was not present. None of the visited clients were new to the home-based caregivers. The depth of their nutrition training was determined by the training manual which is not detailed enough and does not cover information about SAFBDGs. Moreover, their trainers were not nutrition expert or professionals. Uys (2002) in South Africa and Amuyunzu-Nyamongo *et al. (2007)* in Kenya indicated that inadequate training of home-based caregivers made them fail to meet the specific needs of clients. This study concludes that home-based caregivers were able to practice based on their knowledge received from limited training.

5.7 FACTORS THAT INFLUENCE NUTRITION KNOWLEDGE OF HOME-BASED CAREGIVERS

The study compared socio-demographic variables and the level of nutrition knowledge with a view that socio-demographic variables influence nutrition knowledge. The findings showed that socio-demographic variables do not have any influence on the nutrition knowledge of home-based caregivers. In contrast, educational level and length of training of home-based caregivers in Kenya were positively related to their nutrition knowledge (Irungu *et al.*, 2007). Lack of resources hindered home-based caregivers in Zimbabwe to provide balanced diet to their clients irrespective of their adequate nutrition knowledge (Mapfumira and Mawarire, 2013). This study only recorded socio-demographic factors. Other factors such as availability of resources, poverty and sanitary facilities

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were not identified as in other studies. Another factor could have been that the home-based caregivers lived in similar environments and were trained in similar circumstances.

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5.8 CHALLENGES EXPERIENCED BY HOME-BASED CAREGIVERS

There was a range of challenges that were reported by home-based caregivers that hindered the provision of their services. Similar challenges were reported by Moeto *et al.* (2011) in the study conducted in Vhembe District and Irungu *et al.* (2007) in the study conducted in Kenya. Among other challenges these studies included lack of resources such as blood pressure monitor and teaching aids, very low stipend, lack of transport for long travel distances during home visits, clients and community members had a lot of expectations from home-based caregivers, poverty status, lack of health care facilities close to clients as well as lack of cooperation by clients. In addition to the above mentioned challenges, Mohammad and Gikonyo (2005) included poor referral system and lack of proper nutritional support for PLWHA. In Zimbabwe, home-based caregivers were assigned to work where they lived to minimise transport cost and long travel distances (SAfAIDS and HDN, 2007). Home-based caregivers of this study also work where they live but some villages are too big and need transport.

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CHAPTER 6
CONCLUSION AND RECOMMENDATIONS

6.1 INTRODUCTION

This chapter outlines the conclusions drawn and recommendations made based on the findings of the study. Factors that placed limitations on the research study have been identified and described in this chapter.

6.2 CONCLUSION

The study aimed to determine nutrition knowledge and care practices of home-based caregivers in Vhembe District. The researcher first determined the socio-demographic parameters of home-based caregivers. Data revealed that 99.2% were females and only 0.8% was a male. Minimum age of home-based caregivers of this study was 25 years and the majority (84.3%) was aged 30 to 50 years. Over two third (68.7%) of home-based caregivers had secondary education and 18% had tertiary education. More than half (64.1%) had six to ten years HBC working experience. All home-based caregivers received 59 days training which has a nutrition component. However, the results showed that not all home-based caregivers were trained on nutrition. The amount of time spent on the nutrition component was unknown.

The first objective was to determine nutrition knowledge of home-based caregivers. The results showed that only 0.8% of home-based caregivers had adequate nutrition knowledge. Less than half (45.3%) had satisfactory and 53.9% had limited nutrition knowledge. The knowledge was determined using a tool based on South African FBDGs and the National Department of Health manual.

The second objective was to determine nutrition care practices of home-based caregivers. Home-based caregivers indicated that they bath, clean, cook, feed, wash clothes and administer medication for their clients as some of their responsibilities. Some of these activities were rarely observed during home visits, other activities were observed like counting pills, praying, checking client's medical report and client or family representative signing HBC register.

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The third objective was to determine the relationship between nutrition knowledge and care practices of home-based caregivers. The findings showed that home-based caregivers were able to translate their nutrition knowledge to their clients. However, they did not share most of the nutrition information they said they knew with their clients.

The fourth objective was to determine factors that influence nutrition knowledge of home-based caregivers. The study showed that nutrition knowledge of home-based caregivers was not influenced by any of the five socio-demographic variables selected. Their level of nutrition knowledge as well as the challenges experienced may have influenced their practices. There was no connection from what was revealed in focus group discussions and observation regarding nutrition practices.

6.3 LIMITATION OF THE STUDY

Nutrition knowledge and care practices of home-based caregivers were only limited to South African FBDGs and a learner handbook for the training of home-/community-based caregivers. Findings from this study can only be generalised to the population of home-based caregivers of Makhado and Thulamela Municipalities of Vhembe District. No interviews or verification were conducted with the caregivers' supervisors or trainers. Since this was a research project it was at times difficult to correct home-based caregivers when giving wrong information to clients such as that "salt causes bilharzia".

6.4 RECOMMENDATIONS

The following recommendations are made based on the findings of this study:

- To improve nutrition knowledge of home-based caregivers, training on nutrition should be conducted and facilitated by nutrition professionals/experts. In addition, the content of nutrition should be covered in more detail during these trainings and carried out as refresher courses. Refresher courses and continuing education should be done annually.
- The National Department of Health manual that is used to provide 59 days initial training for home-based caregivers should be reviewed to include information about South African FBDGs.

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- To strengthen nutrition education on healthy eating to clients, home-based caregivers should be provided with teaching materials such as pamphlets, posters and leaflets by the Department of Health and be encouraged by their coordinators to prepare lesson plans for all lessons to be given to clients.
- Monitoring and evaluation of home-based care practices should be done regularly with emphasis on client's well-being.
- The findings of this study can serve as baseline information for future studies.

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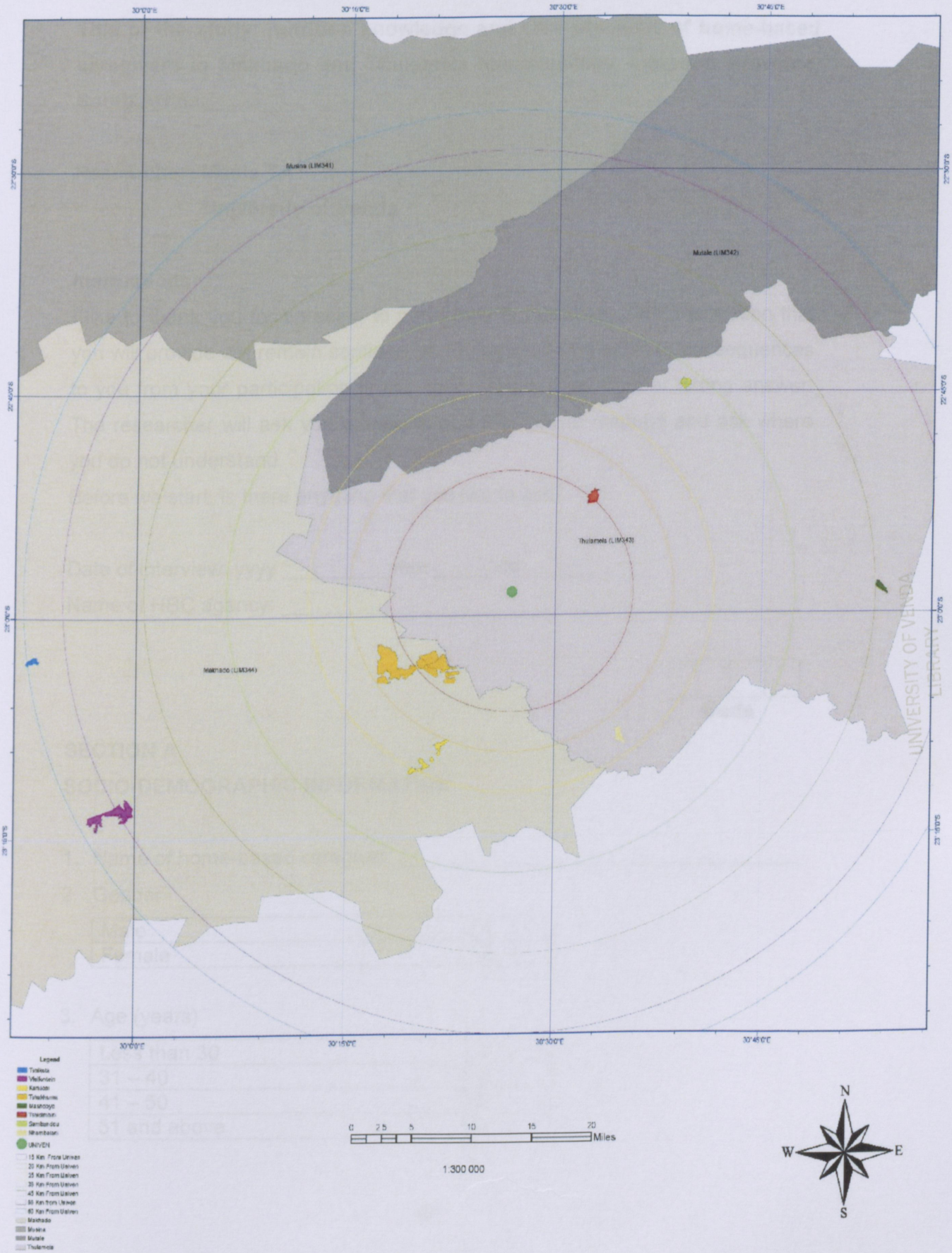
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APPENDIX A: VILLAGES WHERE AGENCIES ARE LOCATED



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APPENDIX B: QUESTIONNAIRE

Title of the study: nutrition knowledge and care practices of home-based caregivers in Makhado and Thulamela Municipalities, Limpopo Province, South Africa.

Researcher: Masia TA

University of Venda

Instructions:

I like to thank you for agreeing to participate in this study. The information that you will provide will remain confidential. There will be no adverse consequences to you from your participation in this study. There is no right or wrong answer. The researcher will ask you questions and feel free to respond and ask where you do not understand.

Before we start, is there anything that you like to ask?

Date of interview: yyyy _____ mm _____ dd _____

Name of HBC agency: _____

Code

SECTION A

SOCIO-DEMOGRAPHIC INFORMATION

1. Name of home-based caregiver: _____
2. Gender

Male	1	
Female	2	

3. Age (years)

Less than 30	1	
31 – 40	2	
41 – 50	3	
51 and above	4	

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4. Marital status

Married/living together	1	
Single	2	
Divorced/widow	3	

5. Educational level

Never attended	1	
Grade 1 – 4	2	
Grade 5 – 7	3	
Grade 8 – 10	4	
Grade 11 – 12	5	
Tertiary, specify	6	

6. Do you have any qualification(s)?

Yes	1	
No	2	

7. If yes to question 6, specify the qualification.

_____

8. When did you start working as a home-based caregiver?

_____

9. Have you ever been trained on nutrition?

Yes	1	
No	2	

10. If yes to question 9, by whom?

Nurses	1	
Dietitians or Nutritionists	2	
Medical practitioners	3	
Family members	4	
Friends	5	
Other, specify	6	

11. What information did you receive during training on nutrition?

_____

12. What types of condition do the people you care for usually have?

HIV/AIDS	1	
Diabetes	2	
Cancer	3	
Tuberculosis	4	
Other, specify	5	

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13. How do you get to know that people need your care?

14. How many clients do you visit per day?

15. How much time do you spend with one client?

SECTION B

NUTRITION KNOWLEDGE QUESTIONNAIRE

16. Which food should form the basis of most meals?

17. What is the importance of eating a variety of food?

18. How often could meat/chicken/eggs/fish/milk be eaten?

19. What is the importance of advising clients to eat legumes (e.g. dried beans) regularly?

20. What do you advise your clients on fat intake?

21. What do you advise your clients on sugar intake?

22. What do you advise your clients on salt intake?

23. What is the importance of physical activity for your clients?

24. How often should your clients eat vegetables and fruits?

25. What is the importance of drinking clean, safe water in the body?

26. How much water should people drink per day?

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27. What causes dehydration?

28. How do you prepare oral rehydration solution (ORS)?

29. How often do you give oral rehydration solution?

30. What constitute a balanced diet?

31. What are the three basic food groups?

32. Give examples of energy foods?

33. Give examples of body building foods?

34. Give examples of protective foods?

35. Which foods are given to people with swallowing difficulties?

36. What nutrition advice do you give to people suffering from nausea and vomiting?

37. What nutrition advice do you give to people suffering from weight loss?

SECTION C

NUTRITION KNOWLEDGE TEST (11 POINTS)

Correct answers are indicated in bold

38. Which food should form the basis of most meals? (1)

    1. ***Starch***
    2. *Protein*
    3. *Vitamin & mineral*
    4. *Do not know*

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39. What is the importance of advising clients to eat legumes (e.g. dried beans) regularly? (1)

    1. *To get energy*
    2. ***To get protein / to build the body***
    3. *Vitamin & mineral*
    4. *Do not know*

40. What do you advise your clients on fat intake? (1)

    1. ***To eat sparingly***
    2. *To eat too much*
    3. *Drain fat after cooking*
    4. *Do not know*

41. How often should your clients eat vegetables and fruits? (1)

    1. *4-6 times/week*
    2. *1-3 times/week*
    3. ***Daily***
    4. *Do not know*

42. How do you prepare oral rehydration solution (ORS)? (1)

    1. ***1 liter boiled water + 8 level teaspoon sugar + ½ level teaspoon salt***
    2. *2 liter boiled water + 8 level teaspoon sugar + ½ level teaspoon salt*
    3. *1 liter boiled water + 6 level teaspoon sugar + ½ level teaspoon salt*
    4. *1 liter boiled water + 8 level teaspoon sugar + 1 level teaspoon salt*

43. What are the three basic food groups? (1)

    1. *Energy food, protective food and fatty food*
    2. *Body building food and fatty food and*
    3. ***Energy food, Body-building food & Protective food***
    4. *Do not know*

44. Give examples of energy foods? (1)

    1. *Protein sources*
    2. ***Starch/fat sources***
    3. *Vitamin & mineral sources*
    4. *Do not know*

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45. Give examples of body building foods? (1)

1. *Starch/fat sources*
2. *Vitamin & mineral sources*
3. ***Protein sources***
4. *Do not know*

46. Give examples of protective foods? (1)

1. ***Vitamin & mineral sources***
2. *Starch/fat sources*
3. *Protein sources*
4. *Do not know*

47. What nutrition advice do you give to people suffering from nausea and vomiting? (1)

a. *Eat small frequent meals*
b. *Stay away from bad cooking odor*
c. *Eat before taking medication*
d. *Eat very cold and hot food*

1. ***a, b & c***
2. *a, c & d*
3. *all of the above*
4. *none of the above*

48. What nutrition advice do you give to people suffering from weight loss? (1)

a. *Eat starchy and fatty foods to regain weight*
b. *Eat small meals more often*
c. *Drink lot of water with meals*
d. *Avoid drinking with meals*

1. *a, b & c*
2. ***a, b & d***
3. *all of the above*
4. *none of the above*

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APPENDIX B1: SWIVUTISO

Nhloko-mhaka ya lavisiso: vutivi eka ta madyelo na maendlelo ka ti home-based caregivers ta ka masipala wa Makhado na Thulamela exifundzheni xa Limpopo eAfrika Dzonga.

Mulavisisi: Masia TA

Yunivhesithi ya Venda

Swiletelo:

Ndzi rhandza ku khensa ku va mi pfumela ku nghenelela eka vulavisisi lebyi. Mahungu lama mi nga ta ma nyika ma ta va xihundla. A ku nga vi na swi rhalanganyi swo karhi leswi nga ta humelela eka n'wina eku nghenelelani eka vulavisisi lebyi. Nhlamulo yinwana na yinwana ya amukeleka. Mulavisisi u ta mi vutisa swivutiso. Mi komberiwa ku va mi hlamula hi laha mi kotaka ha kona na ku vutisa laha mi nga swi twisisiku.

Ku na swinwana mi tsakelaku ku swi vutisa hi nga se sungula?

Siku: yyyy _____ mm _____ dd _____

Vito ra nhlangano wa HBC: _____

Khodi

XIYENGE XA A

SOCIO-DEMOGRAPHIC INFORMATION

1. Vito ra home-bases caregiver: _____
2. Rimbewu

Wanuna	1	
Wansati	2	

3. Malembe

eHansi ka 30	1	
31 – 40	2	
41 – 50	3	
51 na ku tlula	4	

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4. Xiyimo xa vukati

Ndzi tekiwile	1	
A ndzi tekiwanga	2	
Ndzi tshikiwile/ndzi noni	3	

5. Xiyimo xa dyondzo

A ndzi nghenangi xikolo	1	
Ntangha 1 – 4	2	
Ntangha 5 – 7	3	
Ntangha 8 – 10	4	
Ntangha 11 – 12	5	
Thexiyari, kombisa	6	

6. Una tidyondzo to karhi leti u nga ti pasela?

Ina	1	
Hayi	2	

7. Loko ku ri ina ka xivutiso xa 6, kombisa tindyondzo ta kona.

_____

8. U sungurile rini ku tirha tani hi home-based caregiver?

_____

9. Mi tshama mi dyondzisiwa hi ta madyelo?

Ina	1	
Hayi	2	

10. Loko ku ri ina ka xivutiso xa 10, mi dyondzisiwe hi mani?

Vaongori	1	
Dieticians kumbe Nutritionists	2	
Madokodela	3	
Vandyangu	4	
Vanghana	5	
Vanwana, kombisa	6	

11. Hi mahi mahungu lama mi dyondzisiweke wona?

_____

12. Vanhu lava mi va tlhogomelaka va karhatiwa hi mavabyi muni?

Vuvabyi bya HIV/AIDS	1	
Vuvabyi bya chukela	2	
Vuvabyi bya fukuzani	3	
Vuvabyi bya rifuva	4	
Manwana, kombisa	5	

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13. Mi swi tiva njhani ku ri vanhu va lava va[illegible]ayisi bya nwina?

_____

14. Mi endzela vanhu va ngani ni siku?

_____

15. Mi heta nkarhi wo tani hi kwihi loko mi endzela valanguteri va nwina?

_____

XIYENGE XA B

XIKAMBELWANA XA VUTIVI HI TA MADYELO

16. Hi swihi swakudya leswi nga dyiwaka minkarhi hinkwayo?

_____

17. Hi wihi nkoka wa ku dya swakudya swa ku hambana-hambana?

_____

18. Xana nyama/tihuku/matandza/hlampfi/masi swi nga dyiwa ka ngani?

_____

19. Hi wihi nkoka wa ku tshundzuxa vavabyi/valanguteri ku dya tinyawa hi minkarhi hinkwayo?

_____

20. Mi va tshundzuxa yini valanguteri va n'wina hi ta madyelo ya mafhurha?

_____

21. Mi va tshundzuxa yini valanguteri va n'wina hi ta madyelo ya chukele?

_____

22. Mi va tshundzuxa yini valanguteri va n'wina hi ta madyelo ya munyu?

_____

23. Hi wihi nkoka wa vutiolori eka vavabyi/valangutari va n'wina?

_____

24. Vavabyi/valangutari va n'wina va fanele ku dya ka ngani matsavu na mihandzu?

_____

25. Hi wihi nkoka wa ku n'wa mati mo tenga emirini?

_____

26. Vanhu va fanele ku nwa mati ma mpimo wo tani hi kwihi hi siku?

_____

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27. I ncini xi endlaku leswaku vanhu va he[illegible]wa hi mati emirini?

_____

28. Diripi yi endlisiwa ku yini?

_____

29. Diripi yi nyikiwa loko swi te yini?

_____

30. Hi swihi swakudya leswi endlaku dyelo lowu fuweke?

_____

31. Hi yihi mintlawa mi nharhu ya swakudya swa ntolovelo?

_____

32. Nyika swikombiso swa swakudya leswi nyikaka matimba.

_____

33. Nyika swikombiso swa swakudya leswi akaka miri.

_____

34. Nyika swikombiso swa swakudya leswi sirhelelaka mavabyi.

_____

35. Hi swihi swakudya leswi nyikiwaka vanhu lava tsandzekaka ku minta?

_____

36. Mi va tsundzuxa yini vanhu lava hlambaka timbilu na ku hlata?

_____

37. Mi va tsundzuxa yini vanhu lava nga na ntiko wa le hansi?

_____

XIYENGE XA C

XIKAMBELWANA (11 wa timaraka)

Tinhlamulo leti nga tona ti kombisiwile hi ku bolidiwa

38. Hi swihi swakudya leswi fanelaka ku va swakudyankulu eka tindyelo ta wena? (1)

    1. ***Xitachi***
    2. *Piroteyini*
    3. *Vhitamini na minerali*
    4. *A ni swi tivi*

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39. Hi wihi nkoka wo tsundzuxa munhu ka va tinyawa minkarhi yo tala? (1)

1. *Ku kuma matimba*
2. ***Ku kuma tipiroteyini/ku aka miri***
3. *Ku kuma vhitamini na timinerali*
4. *A ni swi tivi*

40. Mi va tsundzuxa yini vanhu hi ta madyelo ya mafurha? (1)

1. ***Ku dya mafurha matsongo***
2. *Ku dya mafurha mo tala*
3. *Ku halata mafurha loko va heta ku sweka*
4. *A ni swi tivi*

41. Vanhu va fanele ku dya matsavu na mihandzu ka ngani? (1)

1. *Minkarhi ya 4-6 hi vhiki*
2. *Minkarhi ya 1-3 hi vhiki*
3. ***Masiku hinkwawo***
4. *A ni swi tivi*

42. Mati ya diripi ma endlisiwa ku yini? (1)

1. ***Lita yin'we ya mati yo vila na nhungu wa swilepulana swa chukele na hafu ya xilepulana xa munyu***
2. *Tilita timbirhi ta mati yo vila na nhungu wa swilepulana swa chukele na hafu ya xilepulana xa munyu*
3. *Lita yin'we ya mati yo vila na ntsevu wa swilepulana swa chukele na hafu ya xilepulana xa munyu*
4. *Lita yin'we ya mati yo vila na nhungu wa swilepulana swa chukele na xilepulana xin'we xa munyu*

43. Hi yihi mintlawa minharhu ya swakudya? (1)

1. *Swakudya swo nyika matimba, swo sirhelela mavabyi na swa mafurha*
2. *Swakudya swo aka miri na swa mafurha*
3. ***Swakudya swo nyika matimba, swo aka miri na swo sirhelela mavabyi***
4. *A ni swi tivi*

44. Nyika swikombiso swa swakudya swo nyika matimba? (1)

1. *Swakudya swa piroteyini*
2. ***Swakudya swa xitachi na swa mafurha***
3. *Swakudya swa vhitamini na minerali*
4. *A ni swi tivi*

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45. Nyika swikombiso swa swakudya swo [illegible] miri? (1)

1. *Swakudya swa xitachi na swa mafurha*
2. *Swakudya swa vhitamini na minerali*
3. ***Swakudya swa piroteyini***
4. *A ni swi tivi*

46. Nyika swikombiso swa swakudya swo sirhelela mavabyi? (1)

1. ***Swakudya swa vhitamini na minerali***
2. *Swakudya swa xitachi na swa mafurha*
3. *Swakudya swa piroteyini*
4. *A ni swi tivi*

47. Mi va tsundzuxa yini mayelana na madyelo vanhu lava hlambaku timbilu no hlata? (1)

a. *Ku dya swakudya swintsanana ko hlaya hi siku*
b. *Ku va kule na ku nuha koka ku nga ri kahle*
c. *Ku dya va nga se n'wa mapilisi*
d. *Ku dya swakudya swo hola na swo hisa*

1. ***a, b & c***
2. *a, c & d*
3. *Hinkwaswo leswi nga laha henhla*
4. *Ku hava eka leswi nga laha henhla*

48. Mi va tsundzuxa yini mayelana na madyelo vanhu lava ntiko wa vona wu yaku ehansi? (1)

a. *Ku dya swakudya swa xitachi na mafurha ku engetela ntiko*
b. *Ku dya swakudya swintsanana ko hlaya hi siku*
c. *Ku n'wa mati yo tala loko va kha vadya*
d. *Ku ka va nga nwi mati loko va kha va dya*

1. *a, b & c*
2. ***a, b & d***
3. *Hinkwaswo leswi nga laha henhla*
4. *Ku hava eka leswi nga laha henhla*

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Thoho ya ngudo: ndivho ya malele na maitele nga vhashumelavhapo vha mimasipala ya Makhado na Thulamela, vunduni la Limpopo, Afurika Tshipembe.

Mutodulusi: Masia TA
Yunivesithi ya Venda

Ndaela:

Ndi tama u vha livhuwa u tenda u dzhenelele kha ngudo iyi. Mafhungo ane vha do a netshedza a do vha tshiphiri. A hu nga do vha na masindaiitwa a si avhudi kha vhone ngauri vha dzhenelela kha ngudo iyi. Ahuna phindulo i re yone na i si yone. Mutodulusi u do vha vhudzisa dzimbudziso, vha vhofholowe vha ambe nau vhudzisa hune vha sa fhire zwavhudi.

Huna zwine vha toda u vhudzisa phanda ha musi ri sa athu u thoma.

Datumu ya dzimbudziso: yyyy _____ mm _____ dd_____

Dzina la dzhendedzi la HBC: _____

Khoudu

KHETHEKANYO YA A

SOCIO-DEMOGRAPHIC INFORMATION

1. Dzina la home-based caregivers:_____
2. Mbeu

Munna	1	
Mufumakadzi	2	

3. Vhukale nga minwaha

Mituku kha 30	1	
31 – 40	2	
41 – 50	3	
51 na u fhira	4	

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4. Vho maliwa

Ndo maliwa	1	
A tho ngo maliwa	2	
Ro talana/ndo lovhelwa	3	

5. Murole we vha swika khawo

A tho ngo ya tshikoloni	1	
Gireidi ya 1 – 4	2	
Gireidi ya 5 – 7	3	
Gireidi ya 8 – 10	4	
Gireidi ya 11 – 12	5	
Pfunzo dza ntha, kha vha taluse:.....	6	

6. Vha na ndalukanyo dza ngudo dza ntha naa?

Ee	1	
Hai	2	

7. Arali phindulo hu ee ha 6, ndi yi fhiyo ndalukanyo ya hone?

_____

8. Vho thoma lini u shuma sa mushumela-vhapo?

_____

9. Vho pfumbudzwa maelana na malele o teaho?

Ee	1	
Hai	2	

10. Arali phindulo hu ee kha 9, vho pfumbudzwa nga nnyi?

Manese	1	
Dietician kana Nutritionist	2	
Madoketela	3	
Dzikhonani	4	
Vha muta	5	
Vhanwe-vho, kha vha taluse:	6	

11. Ndi mafhungo-de e vha a wana musi vha tshi pfumbudziwa?

_____

12. Vha thogomela vhathu vhane vha lwala malwadzi afhio?

Vhulwadze ha HIV/AIDS	1	
Vhulwadze ha swigiri	2	
Vhulwadze ha cancer	3	
Vhulwadze ha lufhia/TB	4	
Manwe-vho, kha vha taluse:	5	

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13. Vha zwi divhisa hani uri vathu vha khou ṱoda thuso yavho?

_____

14. Vha thogomela vhalwadze vhangana nga duvha?

_____

15. Vha fhedza thsikhala tshingafhani vhana mulwadzi muthihi?

_____

KHETHEKANYO YA B

NUTRITION KNOWLEDGE TEST

16. Ndi zwifhio zwiliwa zwine zwa fanela u vha zwinzhi kha zwiliwa zwavho?

_____

17. Ndi ifhio ndeme ya u la zwiliwa zwo fhambanaho?

_____

18. Zwiliwa zwi no nga nama/khuhu/makumba/khovhe/mafhi zwi fanela u liswa hani?

_____

19. Ndeme ya u eletshedza vhalwadze uri vhale dzinawa ngau fhambana hadzo tshifhinga tshinzhi ndi ifhio?

_____

20. Vha eletshedza mini vhalwadze vhavho kha kulele kwa mapfura?

_____

21. Vha eletshedza mini vhalwadze vhavho kha kulele kwa swigiri?

_____

22. Vha eletshedza mini vhalwadze vhavho kha kulele kwa muno?

_____

23. Ndi ifhio ndeme ya nyonyoloso kha vhalwadze vhavho?

_____

24. Vhathu vha tea ula mirhoho na mitshelo lungana?

_____

25. Ndeme ya u nwa madi o kunaho muvhilini ndi i fhio?

_____

26. Ndi madi mangafhani ane vhathu vha tea u nwa nga duvha?

_____

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27. U shaya madi muvhilini hu vhangwa nga mini?

_____

28. Madi a ne a fhiwa vhathu vha tshikho shuluwa vha ya itisa hani?

_____

29. Madi a ya a u shuluwa vha ya fhisa hani?

_____

30. Malele o teaho a angaredzwa nga mini?

_____

31. Ndi zwifhio zwigwada zwa zwiliwa zwiraru zwa vhuthogwa?

_____

32. Kha vha fhe tsumbo ya zwiliwa zwo no fha manda.

_____

33. Kha vha fhe tsumbo ya zwiliwa zwino fhata muvhili.

_____

34. Kha vha fhe tsumbo ya zwiliwa zwino tsireledza malwadze.

_____

35. Ndhi zwifhio zwiliwa zwino fhiwa vhathu vhane vha vha na thaidzo ya u mila?

_____

36. Ndi ifhio ngeletshedzo maelana na zwililwa ine vha fha vathu vhane vha vha na tshilinganyo na u tandza.

_____

37. Ndi ifhio ngeletshedzo ine vha fha vhathu vhane vha kho onda kha malwadze?

_____

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KHETHEKANYO YA C

NUTRITION KNOWLEDGE TEST (11 POINTS)

Phindulo dza vhukuma dzo swifhadzwa

38. Ndi zwifhio zwiliwa zwine zwa fanela u vha zwinzhi kha zwiliwa zwavho? (1)

    1. ***Tshiitatshi***
    2. *Phurothini*
    3. *Vithamini na dzi minerala*
    4. *A thi divhi*

39. Ndi ifhio ndeme ya u eletshedza vhalwadze uri vhale dzinawa ngau fhambana hadzo tshifhinga tshinzhi? (1)

    1. *U wana nungo*
    2. ***U wana phurothini kana u fhata muvhili***
    3. *Vithamini na dzi minerala*
    4. *A thi divhi*

40. Vha eletshedza mini vhalwadze vhavho kha kulele kwa mapfura? (1)

    1. ***U la mapfura zwituku***
    2. *U lesa mapfurha*
    3. *U tevhula mapfura nitshi fhedza u bika*
    4. *A thi divhi*

41. Vhathu vha tea ula mirhoho na mitshelo lungana? (1)

    1. *Luna u ya kha rathi nga vhege*
    2. *Luthihi u ya kha luraru nga vhege*
    3. ***Duvha na duvha***
    4. *A thi divhi*

42. Vha ya itisa hani Madi a ne a fhiwa vhathu vha tshikho shuluwa? (1)

    1. ***Lithara thihi ya madi yo vhilisiwaho na kulebula dza malo dza swigiri na hafu ya kulebula kwa muno.***
    2. *Lithara mbiri dza madi yo vhilisiwaho na kulebula dza malo dza swigiri na hafu ya kulebula kwa muno.*
    3. *Lithara thihi ya madi yo vhilisiwaho na kulebula dza rathi dza swigiri na hafu ya kulebula kwa muno.*
    4. *Lithara thihi ya madi yo vhilisiwaho na kulebula dza malo dza swigiri na thihi ya kulebula kwa muno.*

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43. Ndi zwifhio zwigwada zwa zwiliwa zwira zwa vhuthogwa? (1)

1. *Zwiliwa zwo fha nugo, zwo tsireledza malwadze and zwa mapfura.*
2. *Zwiliwa zwa u fhata muvhili na zwa mapfura.*
3. ***Zwiliwa zwo fha nugo, zwo fhata muvhili na zwo tsireledza malwadze.***
4. *A thi divhi*

44. Kha vha fhe tsumbo ya zwiliwa zwo no fha manda. (1)

1. *Zwiliwa zwa phurothini*
2. ***Zwiliwa zwa tshitatshi kana zwa mapfura***
3. *Zwiliwa zwa dzi vithamini na dzi minerala*
4. *A thi divhi*

45. Kha vha fhe tsumbo ya zwiliwa zwino fhata muvhili. (1)

1. *Zwiliwa zwa dzi vithamini na dzi minerala*
2. *Zwiliwa zwa tshitatshi kana zwa mapfura*
3. ***Zwiliwa zwa phurothini A thi divhi***
4. *A thi divhi*

46. Kha vha fhe tsumbo ya zwiliwa zwino tsireledza malwadze. (1)

1. ***Zwiliwa zwa dzi vithamini na dzi minerala***
2. *Zwiliwa zwa tshitatshi kana zwa mapfura*
3. *Zwiliwa zwa phurothini*
4. *A thi divhi*

47. Ndi ifhio ngeletshedzo maelana na zwililwa ine vha fha vathu vhane vha vha na tshilinganyo na u tandza. (1)

a. *U la zwiliwa zwituku tshifhinga tshothe*
b. *U tutshela kule na minukho ya u bika isi ya vhudi*
c. *U la musi ni sathu nwa mishonga*
d. *U la zwiliwa zwa u rothola na zwo fhisa*

1. ***a, b & c***
2. *a, c & d*
3. *zwothe zwire nga ntha*
4. *Ahuna nga zwire zwa nga ntha*

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48. Ndi ifhio ngeletshedzo ine vha fha vhathu vhane vha kho onda kha malwadze? (1)

a. *U la zwiliwa zwa tshitatshi na zwa mapfura u engedza muvhili*
b. *U la zwiliwa zwituku tshifhinga tshothe*
c. *U nwesa madi ni tshi khou la*
d. *U sa nwa madi ni tshi khou la*

1. *a, b & c*
2. ***a, b & d***
3. *zwothe zwire nga ntha*
4. *Ahuna nga zwire zwa nga ntha*

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APPENDIX C: INTERVIEW GUIDE – FOCUS GROUP DISCUSSION

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Title of the study: nutrition knowledge and care practices of home-based caregivers in Makhado and Thulamela Municipalities, Limpopo Province, South Africa.

Researcher: Masia TA
University of Venda

Instructions:

I like to thank you for agreeing to participate in this study. The information that you will provide will be recorded and remain confidential. There will be no adverse consequences to you from your participation in this study. There is no right or wrong answer. The researcher will ask questions and feel free to talk as much as you can and ask where you do not understand. This is an open discussion interview where you are all expected to freely participate.

Is there anything you will like to ask before we start?

Date: yyyy _____ mm _____ dd _____

Name of HBC agency: _____

1. Let us discuss caring for your clients.
2. Tell us about food and meals for your clients.
3. Tell us the training that home-based caregivers received.
4. Anything else that you would like to share with us.

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APPENDIX C1: INTERVIEW GUIDE (XITSONGA)

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Nhloko-mhaka ya lavisiso: vutivi eka ta madyelo na maendlelo ka ti home-based caregivers ta ka masipala wa Makhado na Thulamela exifundzheni xa Limpopo eAfrika Dzonga.

Mulavisisi: Masia TA
Yunivhesithi ya Venda

Swiletelo:

Ndzi rhandza ku khensa ku va mi pfumela ku nghenelela eka vulavisisi lebyi. Mahungu lama mi nga ta ma nyika ma ta rikhodiwa na kona ma ta va xihundla. A ku nga vi na swirhalanganyi swo karhi leswi nga ta humelela eka n'wina eku nghenelelani eka vulavisisi lebyi. Nhlamulo yinwana na yinwana ya amukeleka. Mulavisisi u ta mi vutisa swivutiso. Mi komberiwa ku tshuxeka mi hlamula hi laha mi kotaka ha kona na ku vutisa laha mi nga swi twisisiku. Sweswi hi ya kanela hi ta madyelo laha hi faneleke ku vulavula hinkwerhu.

Ku na swi nwana mi tsakelaku ku swi vutisa hi nga se sungula?

Siku: yyyy _____ mm _____ dd _____

Vito ra nhlangano wa HBC: _____

1. Hi hlamuseni hi ta mahlayiselo ya valanguteri wa n'wina.
2. Hi byeleni hi ta madyelo ya valanguteri va n'wina.
3. Hi hlamuseleni tidyondzo leti ti home-based caregivers ti nyikiwaka tona.
4. Ku na swinwana mi tsakelaka ku bula na hina hi swona.

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Creating Future Leaders

Thoho ya ngudo: ndivho ya malele na maitele nga vhashumelavhapo vha mimasipala ya Makhado na Thulamela, vunduni la Limpopo, Afurika Tshipembe.

Mutodulusi: Masia TA
Yunivesithi ya Venda

Ndaela:

Ndi tama u vha livhuwa kha u tenda u dzhenelela kha ngudo iyi. Mafhungo ane vha do a netshedza a do vha tshiphiri. A hu nga do vha na masindaiitwa a si avhudi kha vhone ngauri vha dzhenelela kha ngudo iyi. Ahuna phindulo i re yone na i si yone. Mutodulusi u do vha vhudzisa dzimbudziso, vha vhofholowe vha ambe nau vhudzisa hune vha sa fhire zwavhudi. Heyi ndi nyambedzano khagala ine vhakho lavhelelwa u vhofholowa musi vha tshi fhindula.

Huna zwine vha toda u vhudzisa phanda ha musi ri sa athu u thoma?

Datumu ya dzimbudziso: yyyy _____ mm _____ dd_____

Dzina la dzhendedzi la HBC: _____

1. A ri ambe nga vhudalo ndila ine vha fara ngayo vhalwadze vhavho.
2. A vha ri vhudze nga ha kulele na zwiliwa zwa vhalwadze vhavho.
3. A vha ri vhudze nga ngudo dzine vha dzi wana kha mushumo wavho.
4. Huna zwinwe zwine vhanga tama u amba na rine nga zwo.

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APPENDIX D: NUTRITION CARE PRACTICES OBSERVATIONAL CHECKLIST

University of Venda
Creating Future Leaders

Title of the study: nutrition knowledge and care practices of home-based caregivers in Makhado and Thulamela Municipalities, Limpopo Province, South Africa.

Researcher: Masia TA
University of Venda

Instructions:

I like to thank you (home-based caregivers) for allowing me to come with you to the home of your client. The researcher will observe the activities that you do when caring for your clients.

Name of home-based care agency: _____

HBC code

Date: yyyy _____ mm _____ dd _____

Name of home-based caregiver: _____

Caregiver's code

Activities	Observation remarks
1. Care for the client	
a. Washing hands with soap or alcohol hand gel before and after caring for the client	
b. Wearing gloves when caring for the client	
c. Washing clothes of the client	
d. Feeding client who are unable to eat	

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2. Hygiene practices in food handling	
a. Washing hands with soap before handling food	
b. Use of separate utensils when preparing different foods	
c. Washing kitchen utensils with soap	
d. Covering head during food handling and preparation	
3. Environmental hygiene practices	
a. Keeping the house of the client clean	
b. Keeping the yard of the client clean	
4. Personal hygiene of home-based caregivers	
Cleanliness such as clean uniform, nail, hair	
5. Nutrition education given to clients	
6. Number of clients visited per day	
7. Time spent with one client	

8. Other observation remarks:

_____

_____

_____



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RESEARCH AND INNOVATION
OFFICE OF THE DIRECTOR

NAME OF RESEARCHER/INVESTIGATOR:
MASIA T.A.

PROJECT TITLE: *Nutritional knowledge and practises of home-based caregivers in Makhado and Thulamela municipalities, Limpopo Province, South Africa*

PROJECT NO: SHS/10/NUT/001

SUPERVISORS/ CO-RESEARCHERS/ CO-INVESTIGATORS

NAME	INSTITUTION & DEPARTMENT	ROLE
Prof. X.G. Mbhenyane	University of Venda, Department of Nutrition	Supervisor
Mr. N.S. Mabapa	University of Venda, Department of Nutrition	Co-Supervisor
Ms. L.F. Mushaphi	University of Venda, Department of Nutrition	Co-Supervisor

ISSUED BY:
UNIVERSITY OF VENDA, HEALTH, SAFETY AND RESEARCH ETHICS COMMITTEE

Date Considered: 02 August 2010
Decision by Ethical Clearance Committee Granted
Signature of Chairperson of the Committee: .....
Name of the Chairperson of the Committee: Prof. X.G. Mbhenyane
FOR:

UNIVERSITY OF VENDA
PRIVATE BAG X5050, THOHOYANDOU, 0950, LIMPOPO PROVINCE, SOUTH AFRICA
TELEPHONE (015) 962 8504/8484 /8313 FAX (015) 962 8439

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RESEARCH AND INNOVATION

OFFICE OF THE DIRECTOR

01 November 2010

Dr. Agrrey Mabuti Morake

HOD: Department of Health and Social Development

APPLICATION FOR PERMISSION TO CONDUCT RESEARCH IN VHEMBE DISTRICT

We hereby request your office to grant Masia Tirhani Asnath (11522011) permission to conduct a research project at Vhembe District. She is currently studying MSc Public Nutrition. As part of the curriculum it is expected of her to conduct research. The topic of her study is *"Nutrition Knowledge and practices of Home-Based Caregivers in Makhado and Thulamela Municipalities of Vhembe District, Limpopo Province, South Africa".*

Copy of her research proposal and ethical certificate from the institution are enclosed at your perusal.

For more information contact the researcher Masia TA at 015 962 8821/8334 or 073 956 4454.

02/11/10

Director: Research and Innovation **Date**

APPROVED / NOT APPROVED: .....

..... Date: .....

Head of Department: Department of Health and Social Development.

UNIVERSITY OF VENDA

PRIVATE BAG X5050, THOHOYANDOU, 0950. LIMPOPO PROVINCE. SOUTH AFRICA
TELEPHONE 015 962 8313 / 8484 / 8504. FAX 015 962 8439 / 4749
Email: research@univen.ac.za

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LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH & SOCIAL DEVELOPMENT

Enquiries: Selamolela Donald

Ref: 4/2/2

07 February 2011
Masia T
University of Venda
Thohoyandou
0950

Dear Madam

Re: Permission to conduct the study titled: Nutrition knowledge and practices of home based caregivers in Makhado and Thulamela municipalies of Vhembe District, Limpopo, South Africa.

1. The above matter refers.
2. The permission to conduct the above mentioned study is hereby granted.
3. Kindly be informed that:-
   - Further arrangement should be made with the targeted institutions.
   - In the course of your study there should not be any action that will disrupt the services
   - After completion of the study, a copy should be submitted to the Department to serves as a resource
   - The researcher should be prepared to assist in the interpretation and implementation of study recommendation where possible

Your cooperation will be highly appreciated

Head of Department
Health and Social Development
Limpopo Province

Private Bag x 9302 Polokwane.
18 College Str. Polokwane 0700. Tel.: (015) 293 6000 Fax: (015) 293 6211 Website: http/www.limpopo.gov.za

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APPENDIX H: PERMISSION LETTER TO VHEMBE DISTRICT

SCHOOL OF HEALTH SCIENCES

08 March 2011

PHC Manager
Vhembe District
Department of Health and Social Develpoment
Thohoyandou
0950

Dear Sir/Madam

Re: Request to use home-based care agencies for research

I **Masia Tirhani Asnath** (11522011) currently registered for Master of Science in Public Nutrition with the University of Venda is hereby requesting permission to use home-based care agencies for a research purpose. The title of the study is **"Nutrition Knowledge and Practices of Home-Based Caregivers in Makhado and Thulamela Municipalities of Vembe District, Limpopo Province, South Africa".**

The study objectives are as follows:
1. To determine nutrition knowledge of home-based caregivers.
2. To determine nutrition practices of home-based caregivers.
3. To determine factors that influence nutrition knowledge and practices.

The permission to conduct the study has been granted by the Ethical Committee of Department of Health and Social Development, Limpopo Province (see the attached letter). I further request a list of all HBC agencies in Makhado and Thulamela Municipalities. I envisage starting with data collection as soon I receive response from your office.

Thank you in advance

Yours Faithfully

.....

Masia Tirhani Asnath (Researcher)
Contact: 015 962 8334/ 073 956 4454

.....

Mushaphi LF (Co-supervisor)

UNIVERSITY OF VENDA
PRIVATE BAG X5050, THOHOYANDOU, 0950 ♦ LIMPOPO PROVINCE, SOUTH AFRICA
TEL: (015) 962 8821/8334 FAX: (015) 962 8647
E-mail : tirhani.magia@univen.ac.za / lindelani.mushaphi@univen.ac.za Website: www.univen.ac.za

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APPENDIX I: GRANT LETTER FROM VHEMBE DISTRICT

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH & SOCIAL DEVELOPMENT
VHEMBE DISTRCT

MEMO

Ref:
ENQ: Khethani T.S
TEL: 0159622265.

TO: SUB DISTRICT ASSISTANT MANAGERS

FROM: ACTING MANAGER PRIMARY HEALTH CARE.

DATE: 2011/03/25

SUBJECT: PERMISSION TO CONDUCT RESEARCH PROJECT VHEMBE DISTRICT.

1. The above matter has reference.
2. This is to confirm that Vhembe District (Primary health care) gave permission to Masia T.A to conduct research project at Makhado and Thulamela Sub district.
3. This office would like to request the entire staff to her the necessary assistance as required
4. Hoping that you will find this order.

ACTING MANAGER PHC.

2011/03/25
DATE

Private Bag X5009 THOHOYANDOU 0930
Old Parliamentary Building Tel: (015) 962 1000(Health) (015) 962 4958(Social Dev) Fax (015) 962 2274/4623.

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APPENDIX J: CONCERN FORM OF HOME-BASED CAREGIVERS

Title of the study: Nutrition knowledge and care practices of home-based caregivers in Makhado and Thulamela Municipalities, Limpopo Province, South Africa.

Researcher: Masia TA
University of Venda

I, **Tirhani Asnath Masia** (researcher) hereby request your concern to participate in my study. I am currently a registered student for Master of Science in Public Nutrition at the University of Venda. As part of the curriculum it is expected of me to do a research project. The aim of the study is **to determine nutrition knowledge and care practices of home-based caregivers in Makhado and Thulamela Municipalities, Limpopo Province, South Africa.**

Participation in this study is voluntary and you are allowed to withdraw at any stage. I guaranteed that the information you will provide will remain confidential. There will be no adverse consequences to you from your participation in this study.

If you agree to participate, you will be required to:

- Provide demographic information.
- Answer nutrition knowledge test questionnaires.
- Participate in the focus group discussion where you will be tape recorded.
- Allow the researcher to accompany you to the home of your clients to observe your activities more particularly nutrition care practices.

I, ... agree to participate in this study.

Name of home-based caregiver

The study procedures have been explained to me by the researcher. I hope that participation in this study may help to increase my nutrition knowledge. I also acknowledge the fact that participation is voluntary and the information I will provide will remain confidential. Any questions that I may have regarding the research will be answered by the researcher.

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Signed at …… on this day…….. of …… 2011.

_____ _____

Signature of home-based caregiver Date

_____ _____

Signature of researcher Date

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Nhloko-mhaka ya vulavisisi: vutivi eka ta madyelo na maendlelo ka ti home-based caregivers ta ka masipala wa Makhado na Thulamela exifundzheni xa Limpopo eAfrika Dzonga.

Mulavisisi: Masia TA

Yunivhesithi Ya Venda

Mina **Masia Tirhani Asnath** (mulavisisi) ndzi kombela pfumelelo wa nwina ku va mi nghenelela ka vulavisisi bya mina. Enkarhini wa sweswi ndzi dyondza tidyondzo ta le henhla ta *Master of Science in Public Nutrition* eYunivhesithi ya Venda. Ku ya hi xiphemu xa nxaxamelo wa tidyondzo ndzi fanele ku endla vulavisisi byo karhi. Xikongomelo xa vulavisisi lebyi i ku **kambela vutivi bya ta madyelo na maendlelo ka ti Home-based caregivers ta ka masipala wa Makhado na Thulamela exifundzheni xa Limpopo eAfrika Dzonga.**

A ku hlohloteriwi munhu ku nghenelela eka vulavisisi lebyi na swona ma pfumeleriwa ku tshika eka nkarhi unwana na unwana. Ndza tiyisisa leswaku mahungu lama mi nga ta ma nyika ma ta va xihundla. A ku nga vi na swi rhalanganyi swo karhi leswi nga ta humelela eka n'wina eku nghenelelen ka vulavisisi lebyi.

Loko ku ri ku ma pfumela ku nghenelela, mi ta komberiwa ku endla leswi landzelaka:

- Ku nyika vuxokoxoko bya nwina.
- Ku hlamula swivutiso swo kambela vutivi bya n'wina hi ta madyelo.
- Ku nghenelela eka kanelo wa ta madyelo laha mi nga ta rhikhodiwa.
- Ku pfumelela mulavisisi leswaku a famba na nwina emakaya ya valanguteri va nwina ku ya langutisa matirhelo ya nwina ngopfu-ngopfu eka ta swa madyelo.

Mina ..... ndza pfumela ku nghenelela ka vulavisisi lebyi.

Vito ra mungheneleri

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Timfanelo hinkwayo ti hlamuseriwile hi mulavisisi. Ndza swi twisisa ku nghenelela hiku tshembha leswaku swi ta pfuna ku antswisa vutivi bya mina eka swa madyelo. Ndzi ndhundhuzela na mhaka ya ku a ku hlohloteriwi munhu ku nghenelela na kona mahungu lama ndzi nga ta ma nyika ma ta va xihundla. Swivutiso swinwana na swinwana leswi ndzi nga ta va na swona swi ta hlamuriwa hi mulavisisi.

Ndzi sayinile ndzi ri ..... hi ti ..... ta ..... 2011.

_____ _____

Sayino wa mungheneleri Siku

_____ _____

Sayino wa mulavisisi Siku

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Thoho ya ngudo: ndivho ya malele na maitele nga vhashumelavhapo vha mimasipala ya Makhado na Thulamela, vunduni la Limpopo, Afrika Tshipembe.

Mutodulusi: Masia TA

Yunivesithi ya Venda

Nne, Tirhani Asnath Masia (Mutodulusi) ndi humbela thendelo yavho uri vha dzhenelele kha thoduluso yanga. Ndi mugudiswa wa MSc Public Nutrition Yunivesithi ya Venda. Ndi fanela u ita thoduluso sa tshipida tsha kharikhulamu yanga. Tshipikwa tsha ngudo ndi u **sedza ndivho maelana na malele na maitele a vhashumelavhapo vha mimasipala ya Makhado na Thulamela, Vunduni la Limpopo, Afurika Tshipembe.**

Vha tou nanga u dzhenelela kha ngudo na uri vho tendeliwa u litsha tshifhinga tshinwe na tshinwe. Ndi vha fulufhedzisa uri mafhungo ane vha do a netshedza a do dzula a tshiphiri. A hu nga do vha na masiandaiitwa a si avhudi kha vhone ngauri vha dzhenelela kha ngudo iyi.

Arali vha tenda u dzhenelela kha iyi ngudo, vha do humbelwa u:

- Netshedza mafhungo a demogirafi.
- Fhindula dzimbudziso maelana na malele.
- Dzhenelela kha nyambedzano nga tshigwada hune vha do rekhodiwa nga theiphi.
- Tendela mutodulusi a vha fheletshedze midini ya vhathu vhane vha vha thusa u sedza maitele a malele.

Nne .....ndi a tenda u dzhenelela kha ngudo iyi.

Dzina la muvhudziswa

Ndo talutshedziwa maitele a ngudo nga mutodulusi. Ndi a pfesesa uri u dzhenelela kha ngudo iyi zwi nga thusa kha ndivho ya malele. Ndi a tenda uri ndi tou nanga u dzhenelela kha ngudo na uri mafhungo ane nda do a netshedza

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a do dzula a tshiphiri. Dzimbudziso dzinwe na dzinwe dzine nda nga vha nadzo maelana na thoduluso dzi do fhinduliwa nga mutodulusi.

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_____ _____

Tsaino nga muvhudziswa Datumu

_____ _____

Tsaino nga mutodulusi Datumu

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EDITING LETTER

10 NOVEMBER 2014

TO WHOM IT MAY CONCERN

This letter serves as confirmation that I **Matlou Sibaya** have edited the research document of **Tirhani Asnath Masia** (11522011), entitled **"NUTRITION KNOWLEDGE AND CARE PRACTICES OF HOME-BASED CAREGIVERS IN MAKHADO AND THULAMELA MUNICIPALITIES, LIMPOPO PROVINCE, SOUTH AFRICA"** to be submitted for the degree of Master of Science in Public Nutrition at the University of Venda (UNIVEN).

I therefore, declare that the document is to my knowledge devoid of language errors which may deprive Ms Masia's work from being accepted for the qualification.

I am contactable at the above contact details should you have queries.

Regards

Matlou Sibaya (Miss)

PhD Candidate (Tshwane University of Technology) MPhil Second Language Studies (Stellenbosch) BEd Language Methodology (University of Limpopo) BA Languages (University of Limpopo) Higher Education Diploma (University of Limpopo)

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