CHANGING FOOD HABIT AND PERCEIVED HEALTH-RELATED QUALITY OF LIFE AMONG ADULTS IN OYO STATE, NIGERIA

BY

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CERTIFICATION

I certify that this work was carried out by Akinrinade, Grace Oyeladun in the Department of Human Nutrition, Faculty of Public Health, College of Medicine, University of Ibadan; under my supervision.

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ABSTRACT

Studies have revealed culture, climate and economy as drivers of eating habits and patterns among people and groups, while changing food culture and habits influence nutritional status of all age groups. The burden of food-related morbidity and mortality due to unhealthy diet has become public health concern in recent times. The implications of distorted eating behaviour and changing food habit on nutritional status and Perceived Health-related Quality of Life (PHQoL) of adults in Oyo State is unclear. This study was carried out to investigate changing food habits, eating behaviour, and PHQoL of adults in Oyo State, Nigeria.

This descriptive cross-sectional study used a mixed method approach. One Local Government Area (LGA) per senatorial district and two wards (one rural, one urban) per LGA were selected using simple random sampling and 589 household heads aged 50 – 70 years were selected using systematic random sampling. Twelve Focus Group Discussions (FGDs) were conducted using FGD guide to explore earlier food culture. A semi-structured, interviewer-administered questionnaire was used to collect information on socio-demographic and anthropometric characteristics, food habits, eating behaviour, 24-hour dietary recall and PHQoL. Energy and nutrients intake were determined using adapted total dietary assessment software. Adequacy of dietary intake was categorised as inadequate (<80%), adequate (80-120%) and excess (>120%). Body weight and height were measured and Body Mass Index (BMI) was calculated and categorised using WHO standards. Qualitative data were analysed thematically. Quantitative data were analysed using descriptive statistics, Pearson product moment correlation and Multiple regression at $\alpha_{0.05}$.

Respondents were majorly rural dwellers (56.4%), farmers (50.2%) and mean age was 62.3±14.6 years. All respondents reported changes in food habit from pap, maize porridge, *amala*, pounded yam, beans and bean cake to *indomie, spaghetti, semovita* and wheat, with less consumption of fruits. Poor land fertility (69.7%), changes in

food processing method (77.4%), time factor (72.4 %) and absence of wildly grown indigenous vegetables (73.0%) were reported as some of the causes for changing food pattern. Those with bad eating behavior constituted 58.1%. Respondents believed that changing food habits could lead to decreased life expectancy (77.0%), increased prevalence of non-communicable diseases (74.5%) and frequent illness (75.3%). There was significant difference in nutrient intake pattern of energy, protein, fat, vitamin A, calcium, zinc and iron between rural and urban respondents. Energy, protein, vitamin A, calcium, phosphorus and zinc intake were 1839.0±647.0kcal, 62.3±34.4g, 24302.8±14884.3IU, 165.0±140.7mg, 279.3±248.7mg and 11.0±5.9mg respectively. Prevalence of underweight, overweight and obesity was 13.4%, 19.2% and 10.7% respectively. Energy (r=0.17), protein (r=0.12) and zinc (R=0.20) intake had positive significant correlations with PHQoL.

Transition from indigenous to westernised food habits and bad eating behaviour is high among adults in Oyo State. Burden of overweight and obesity (29.9%) and dietary intake are positively correlated with perceived health-related quality of life. Promotion of healthy eating habits and life styles is needed among the respondents.

Keywords: Food habits, Food culture, Health-related quality of life.

Word count: 496

DEDICATION

Oh Lord my God, to you, firstly, is this work dedicated. For “by your great hands” you lead my journey of life and knowledge.

“By your faithfulness” I am an achiever of your purpose and destiny. To you only be all the glory, honour, adoration, power and majesty, forever, and ever, Amen.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACRONYM

BMI - Body Mass Index

BP – Body Pain

CDE - Chronic Energy Deficiency

FGDs – Focus Group Discussion

GH – General Health

HRQL – Health Related Quality of Life

LGAs – Local Government Areas

MEH – Mental Health

MH - Mental Health

PF – Physical Function

PHCN – Power Holding Corporation of Nigeria

PHH – Physical Health

PHQL – Perceived Health Related Quality of Life

RE – Role Emotion

RH – Reported Health

RP – Role Play

SF – Social Function

SPSS – Statistics Package for Social Science

TDA – Total Dietary Assessment

VT – Vitality

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUNDTO THESTUDY

The conceptofcultureisbroaderthanraceorethnicity;itencompasseslanguage, communicationstyles,socialvalues,andreligiousbehaviours. Culture shapeshow people view theworld,theirattitudesabouthealthandtheir foodpreferences(Boyle,2003).The conceptualizationofcultureisbynomeansasimplematter.Onepossiblewaytothinkab out itisthat“cultureistosocietywhatmemoryistoindividual”.Itincludeswhatworkedinth e experience ofsociety sothatitwasworthtransmittingtofuturegenerations(Henry & Eunkook,2002).Culturalcuisinesreflectthegeography,climate,andhistoryoftheloca tion where a culturedeveloped.

Withineachculture(andwithindifferentregionswheretheculture isdisposed)peoplem ay prefer certainfoods,foodpreparationmethods,andfoodcomplicationsfor mealsand snacks. Thediversitywithin a cultureis asas importantdiversitybetweencultures. People fromthesameculture orethnicgroup tendtohave hadsomesimilar experiences. Within eachgroup,however,individualsmayvary intermsofincome,socialclass,religion,age, education,geographicorigin,andthelengthoftimethattheyhavelivedinaparticularpla ce (Boyle, 2003).

All people at all timeshavehad folkways and mores and institutional formwhich served to passontheirculturetoadultsaswellaschildrenandyouth.Thechangingpatternsofsocia l

andeconomiclifeareinconstantinterplaywithadultfoodcultureandhabits(Mishra,2005). Certainrelatively recentchangessuchasincreasedfacilitiesofcommunicationand transportation,intensifiedurbanization,increasing proportionsofolder agegroupsinthe population,growingincrementofleisure forworkingpeopleinindustrialcountries, widened

activitiesforwomen,technologicalchangesinindustryandbusiness,andchanges infoodcultureandhabitsofmany peoplealloverthe worldaresignificantly occurring (Tull, 1996).Dietandattitudetofo odhavechangedmarkedly inrecentyearsintheUnitedKingdom (UK)andwillcontinuetodoso.Demandforabetterquality offoodhasrisen,andpeople aspiretoeatbothmorehealthilyandtobuyfoodthathasareduced impactonthe environment.Butconsumersalsowantaffordabilityandfoodthatfitstheirlifestylesa demonstratedbythedemandforconvenienceandbypeopleeatingoutsideofthehomem ore often (Cabinet office2008).

The belief thatfood habitsseldomor never change,andor difficulttochange isnottrue becauseinmany countriesthecurrentstaplefoodsarenotthesameasthoseeatenevena centuryago.Therefore,foodhabitsandcustomdochange,andtheyareinfluencedinma ny differentways(HumanNutritioninDevelopingWorld,2013).Foodculture isincredibly malleable.Itchangesverymuch,veryquicklyandwe'regoingthroughaperiodofimme nse changeagain.Peoplearoundtheworldarechanging theirdiets becauseofsoaringfood prices,andfast-changingdietsarefortheworstformany people. Ahugenumberof peopleespeciallyintheworld'spoorestcountriesarecutting backonthequantityorquality ofthefoodtheyeatbecauseofrising foodprices.

ThefindingsoftheSurveyintheUnited StatesonWorldchangingeatinghabitsasfoodpricessoarbyThompson,MickCNN(20 11) showedthat39%globally putblameonrisingfoodcostandanother33%citedhealth reasonsfortheirchangingeating habits,while54%ofthepeoplewere noteating thesame kindoffoodasthey didtwoyearsago.Thisstudyalsoshowedtheeffectofglobalization ontheworlddiet, withbothpastaandpizzaranking among thetopthreefavoritefoodsin manycountries.Foodpreferencesaremadeasaresultoftheadjustmentsthataregenerat ed by socialandeconomicchangesthattakeplacethroughoutsociety. Theissuehereis oftennotwhatfoods areeaten,butrather howmuchof eachfood iseatenandhowthe

consumptionisdistributedwithinthesociety orwithinthefamily (HNDW,2013).Social factorsandculturalpracticesinmostcountriesoftheworldhavea very greatinfluenceon what peopleeat, how theypreparefood, theirfeedingpracticesand the food theyprefer.

Culturalfoodpractices areveryrarelythemainor evenan importantcauseofmalnutrition. Onthecontrary,manypracticesaredesignedtopromoteandprotecthealth. Agood exampleisseenintheprovisionofrichenergy-densefoodforwomenduringthefirstmonth following childbirth.However,itistruethatsometraditionalfoodpracticesandtaboosin somesocietiesmay contributetonutrientdeficienciesamongparticulargroupsofthe population. Therefore,Nutritionistsneedtohave agoodknowledge offood habitsand practicesofthecommunitiesinwhichthey worksothatthey canhelptoreinforcethe positivehabits as wellas striveto changeanynegativeones (FLS, 2013).

Thetraditionaldietsofmostsocietiesindevelopingcountriesaregood.Usually,onlymi nor changesareneededtoenablethemtosatisfythenutrientrequirementsofallmembersoft he family,althoughthequantity offoodeatenisamorecommonproblemthanthequality (Marvynundated). Nigerians'food pattern isbasedonthree mainmealsasitobtainsin manyotherAfricancountries.FoodintakeinOyo StateasinmanyotherpartsofNigeriais alsobasedonthree mainmeals daily.The mealsarecomposedofcereals,orroots/tubers, with saucefrom green leaves, oil and meat/fish dependingon theeconomicsituation ofthe household.Inruralareas,peopleeatthe sametypeof dishesbasedontraditionalstaple foods,whereastheurbanpopulationincorporatesmore modernfoodsintotheirdiet.In urban areasinNigeria,asinother countriesinAfrica,alotof food isconsumedoutdoors, mostlyonthestreets,whichisnotthecaseinruralareas.Foodsoldonthestreetsbyvendor

s ismostlycomposedofjuiceandfriedfoods.Nutritionalinadequaciesinfluencenotonly the adult'shealthbutalsotheriskformajorchronicdiseasesinadulthood(Leonie,Christopher, Urban andLena, 2005).

Aroundtheworld,moretraditionalmealsandrecipesareyielding tosoftdrinks,sodas, burgers,andotherhighlyprocessedandstandardizeditems.Many fastfoodsarefriedand are highinfatandsalt,butlowinfiber,vitamins,andsomeminerals.The highlevelof consumptionoffastfoodsisfundingaglobalepidemicthatmay leadtoobesity andother chronic illnesses.Astudy titled"Man'schangingfoodculture"(2010),observedthatthe eatingoffastfoodshasbecomeasignificantpartofnotonlytheyoungergeneration'sdiet butalsooftheadults' dietintheUnitedStates,andincreasingly throughouttheworld. However,thenutritionalvalueoftheseproductsisbeing questioned,andstudiesindicate thatconsumptionofsomeofthesefoodsmay berelatedtoanincreasedhealthrisk, especiallyinadultsofdifferentcategories;hence,theconsumptionoffastfoodsmay be equated with badeating habits.

1.2 STATEMENT OF PROBLEM

The endof secondworldwarrevealedsignificantchangesinfoodconsumptionpattern, fromeatingfreshfoodsinaseasonwhichcanbepreparedathometohavingawidevariety offoodsavailableallthe yearfromaroundtheworld(Albon& Mukharji,2008). Consequently,itisoften notveryeasytomaintain agood eatingpatterninthismodernfast world,where manymealsare eatenawayfromhome;neitherisiteasytosticktoahealth andvarieddietbecausemany individualsfinditeasiertopickupdough-nutormeatpieat lunchtimethantomakeadecentlunchtotaketoworkevery day.Thisoftenleadstobad eatinghabits,junkdietandnutritionalproblems(Lisa,2002).Ithasbeenestimatedthatin awesterndiet,anaveragepersonconsumesapproximately4.5kilogramsofjunkchemi

cals peryear.These chemicalsincludecolorants,preservatives,stabilizers, emulsifiers, antioxidant,anti-cakingagents,fillers,flavour,andmany otheritemsfoundonfoodlabels (Srilakshmi, 2008).

Affluencehasgivenmorepeopletheopportunitytoindulgein‘fastfood’andsugar-rich ‘Fizzy’drinkswhicharenowa regular partofthediet.This,togetherwiththelackof exercisehasledtoariseinthenumberofadultsandchildrenwhoareoverweightandobese (Lisa,2002).Mostrecentexperienceofbothadultsandchildrenisthatofbeingatincreased riskofobesity whichisapointertothefactthatpeoplearenotgoodatchoosingahealthy dietandmaintainingcorrectbodyweight.Cultureinfluencesfoodhabitbydictatingwhat isacceptable toeat,the place of birthinfluencesthe food thata person willbe exposedtoand helps to shapethe dietarypattern that is oftenfollowed forlife (Brown2008).

Thepopulationofmaturedadultsisincreasing,andassessmentoftheirnutritionalstatus has beenneglectedovertheyears.According totheUNpopulationprojection,theglobal populationaged60yearsorover,numbered962millionin2017,more thantwiceaslarge asin1980whentherewere 382millionolder personsworldwide.Thenumber ofolder personsisexpectedtodoubleagainby2050whenitisprojectedtoreachnearly2.1billion. However, two third ofthe world’s older persons livedin thedevelopingregions wheretheir numbersaregrowingfasterthaninthedevelopedregions.

In2050,itisexpectedthatnearly 8 in 10 of theworld’s older persons will be livingin thedevelopingregions(UN, 2017). The“eatwellplatemodel”reflectsfindingsthataMediterraneantypeofdietprotects againstdiet-relateddiseasessuchasdiabetesandcoronaryheartdisease.Consequently,it impliesthateatingahealthydiet,shouldallowtheprovisionofvitaminsneededtomaintain healthwithoutresortingtosupplementing(Albon&Mukherji,2008;andLashern*s etal.*

, 2000). The adults and elderlynutritional status emerged as aproblem in thetwentieth centuryas a resultofthe increasingnumberofadults(individualsaged≥65years)andthey presenta challengetothoseconcernedwiththeirphysicalandemotionalwell-being(Mattithias*etal*., 2001).

1.3 JUSTIFICATIONFOR THE STUDY

Meeting the needofagrowingandwealthierpopulationofthemid-adultsandmatured-adults(age 40years andabove) isa greatchallenge thatrequiresa considerationof the provisionofadequatenutritionwhichisparamountinthemaintenanceoftheirfunctional capacity(WHO, 1989). Thereissuchahugequantity ofnutritioninformationandmisinformationinthe marketplacethatmakesitverydifficulttodifferentiatebetweenwhatisfactorfiction(Lisa, 2002).Inthelightofthis,ByersandMarshal(1995),Jervel(1995),Popkin(1998),Darntol, Niskidaand James,(2004)andNishidaandMucavele(2005)suggestedthatreportsonthe prevalence of diet-related non-communicablediseasesindeveloped anddeveloping countriesneedtobeassessed,andthatthere isalsotheneedtoestimatethegeneralpublic knowledge aboutfood, nutrition,nutritionalstatus,andhealth.

Therefore,itisimportantto assessthefood culture andhabitsofadultstoknowtheir nutrientintakeandnutritional statusforappropriate nutritionalinterventionforthepromotionofanactivelifestyleand healthyliving.Also,theburdenoffood-relatedillhealthmeasuredintermsofmortalityand morbidityissimilartothatattributedtosmoking,andamajorityoftheburdenisattributed to unhealthydiet ratherthan to foodbornediseases (Alborn &Mulkherji, 2008).

Foradultstolivelong andhealthy, meeting thenutritionalneedsofthisgroupmustbe ensured(Oyewumi,2009).Eatingfreshfruits,drinkingcleanwater,avoidingheavymetals, engaginginphysicalexercise,and

livingahealthyandqualitylifestyleisessentials,hence, itisimportanttodevelopaninformationdatabasespecificallyforearly-adults(18-40years), mid-adults(40-62years),andoldadults(62-85years)forplanningandsolving socio- economic and nutritionalproblems of adults.

AnInternationalFoodInformationCouncilSurvey opinedthat93%percentofAmericans believethatfoodcanhavehealthbenefitsbesidestheirnutritivevalueandcandelay the onsetofaging orreducetheriskofseriousandchronicdiseases(Amy,2008).Therefore, theprincipletodealwiththeproblemofbadeating habits,junkdiets,nutritionproblems, andmakingahealthy foodchoice,wheneatingaway fromhomeonaregularbasisisthe focusof thisproject.Thissituation,therefore,necessitatesthe acquisitionof more knowledge innutritionfor designingadequate plansfor food, health,andeconomic resources to meet the challenges of thefutureincreasein theold adult population.

1.4 RESEARCH QUESTIONS

- What arethe food habits of adults in Oyo State, South West Nigeria?
- Whataretherelationshipsbetweensocio-demographic,householdcharacteristics,and foodhabits of adults in OyoState, South West Nigeria?
- Whataretherelationshipsbetweensocio-economic,householdcharacteristicsand nutritional status of adults in Oyo State, South West Nigeria?
- What is the level of malnutrition amongadultsin Oyo state, South West, Nigeria?
- Whatisthelevelofhealth-relatedqualityoflifeofadultsinOyoState,SouthWest Nigeria?
- Whataretherelationshipsbetweensocio-demographic,householdcharacteristicsand health-related qualityof lifeof adults in Oyo State, South West Nigeria?

1.5 OBJECTIVES

General Objective

Thegeneralobjectiveofthisstudy wastoassessfoodhabits,nutritionalstatus,andhealth- related qualityof lifeof adults in Oyo State, South West Nigeria.

SpecificObjectives

- Thespecificobjectives of this studyareto:
- Determinesocio-demographicandsocio-economichouseholdcharacteristicsthat influencefoodhabits andperceived qualityof lifeof adults in Oyo State.
- AssesschangesinfoodhabitsthatinfluencenutritionalstatusandHealthRelated QualityofLifeofadults in Oyo State.
- Examine therelationships betweensocio-demographic andsocio-economic household characteristicsthat influencethe nutritional statusand Health Related Qualityof Lifeof adults in Oyo State.
- Determinetheeffectofchangingfoodcultureandhabitsonhealth-relatedqualityof lifeof adultsin Oyo State.

1.6 SCOPE OFTHESTUDY

Therearemanyimportantissuestobestudiedinthenutritionofadultsin Nigeria:however, forthe purposeof this study, the followingunderlisted areas willbe covered:

- Demographic characteristics of respondents
- Determination ofchanges in foodcultureandhabits of therespondent
- Determination ofnutrients adequacy(energy, protein, Vind minerals).
- Anthropometric measurement (usingMUAC and Heights&weight).
- Bodymass index/MUAC todeterminenutritional status.
- Determination ofnutritional vulnerability.

- Determinationofsomeexistingrelationshipbetweensocio-economicvariablesand nutritional status.

Forthepurposeofthisstudy ‘adult’istakenaspeopleaged18-85yearsforbothmaleand female(Center for productivelongevity, 2013).

CHAPTER TWO

LITERATURE REVIEW

2.1 The concept ofadulthood

Mostpeopletendtothinkabout‘adult’intermsofage,butnosingleagecandefineanadult withinasociety,letaloneonacomparativebasis;wherelegalandsocialliabilitycomesint o the actatdifferent age (CPL,2013). Sometimeswe thinkaboutadultinrelationtovoting, age, gettingmarried,fightingforone’scountry, holdingproperty, buyingadrink or cigarettes,being sued,incurring sentences,obtaining credit,driving avehicle,engaging in paidlabour or attendingvariousformsof entertainmentallof whichhave aged-related restrictionappliedtothem.Hence,wecannotsay anindividualbecomesafulladultatany specificage. As aresult, awiderangeof concepts is invoked when weusetheterm ‘adult’. The wordcanrefer toa stage inthelifecycle:eachindividualisfirsta child,thenayouth, thenanadult.Itcanrefertostatus,anacceptanceby society thatthepersonconcernedhas completedtheirnovitiateandare(orshouldbe)incorporatedmorefullyintothecommuni ty. Itcanrefertoasocialsubset:oradultsasdistinct fromchildrenoritcanincludeasetof ideas and values(Alan 2004)

2.1.1 Definitionof‘adults’

Theproblem ofdefining an adult– and non-adultis so great that at times thosebodies with thegreatestexperienceofmaking suchdefinitiongaveup.Hence,UNESCOin1976 determined that adultis both self-recognizingandrecognized byothers (Alan, 2004). Adulthoodreferstoagrownup,maturein age, size,strength,etcofadultpersons,aman orawomanwhoisfullygrownuporapersonwhohasreachedtheageofmaturity now generally18years (Webster New World CollegeDictionary). Anadult, accordingto theAmerican HeritageDictionaryof EnglishLanguageis a fully grown,

matureorganismthat has completed its final stage of metamorphosis.Adulthoodisthe periodinthehumanlifespaninwhichfullphysicalandintellectual maturity hasbeenattained. Adulthoodis,therefore,commonly thoughtofasbeginningat age20–21years. Inevery culture,thereisaseriesofexpectationaboutthosewhoclaim andarerecognizedasan adult,thoughthiswillvaryfromindividualtoindividualandfrom culture toculture.Characteristicssuchasfar-sightedness,self-control,establishedand acceptablevalues,security,experience,andautonomyareamongthemostcommonone advanced,thoughnotallofuswouldclaimthat to beadults,apersonneedstopossessall thesetraits.

However,Westernhumanisteducators,Houle,andCarlRogersascitedbyAlan(2004)h ave developedthreemainelementsthatseemtoliewithintheconstructofadulthood.Theyare maturity, perspective,and autonomy. Thesethreeelements aredescribed below:

2.1.1.1

Maturity:Humanmaturityisnotjustastate(thoughthecharacteristicsofmaturity canbe recognizedina person) butalsoanidea shouldbe aimedat ratherthan achievedin full.Nevertheless,itstillincludestheidea of thefulldevelopmentandutilizationof allthe individualtalentandtheprocessofmovingtowardsevergreatermaturity isone acknowledged as beingassociated with adulthood.

2.1.1.2 **Perspectives**:Adultsare expectedto behavewithagreatersenseofperspective especially inanoccasionwhensuchadultsseethemselvesasbeingmoreimportantthan theyareseenbyothers;suchperspectivesthatleadtosotunderjudgment aboutthemselves andaboutothers.Hence,adultsareexpectedtohaveaccumulatedexperiencesthatifdra wn upon,willhelpthemachieveamorebalancedapproachtolife andtosociety,tobemore developed in theirthinkingin relation to others.

2.1.1.3 **Autonomy**: This third element ofadulthood meansresponsibility. Oneof thekey conceptsofbeinganadultandnotbeingchildishisthat ofbeing

responsibleforoneself, one'sdeedsanddevelopment.Onestudy definespeopleas'adult'becausethey have assumed responsibilityfor managingtheirown lives. Therefore, to saysomeoneis an adult istosay thatheisentitled,forexample,forawide-rangefreedomoflifestyleandtoafull participationinthemaking ofsocialdecisionanditisalsoto saythatheisobliged,among otherthings,tobemindfulofhisowndeepestinterestsandtocarry afullshareofthe burdensinvolvedinconductingsocietyandtransmittingitsbenefits.Hisadulthoodconsi sts of his fullemployment ofsuch rights and hisfull subjection to such responsibilities (Alan, 2004).

2.1.2 Theglobal perception ofthe termadulthood

InmostpartoftheworId, includingmostoftheUnitedStates,partsoftheUnitedKingdom (England,NorthernIreland,Wales),IndiaandChina,thelegaladultageis18 years (historically21years) formostpurposes, with some notable exceptions:

- Scotland (United Kingdom) and the Netherlands (16years)
- BritishColumbia,NewBrunswick,NewfoundlandandLabrador,NorthwestT erritories, Nova Scotia,Nunavut,YukonTerritory inCanada;NebraskaandAlabamainTheUnited States, and South Korea(19years)
- Indonesia and Japan(20years) (Adult Wikipedia freeEncyclopedia).

Aneventrelating totheoncoming ofadulthoodiscoming ofage,whichencompasses passinga seriesofteststodemonstratethata personispreparedforadulthood,or reaching aspecifiedage.Mostmodernsocietiesdeterminelegaladulthoodbasedonreaching a legallyspecifiedagewithoutrequiringademonstrationofphysicalmaturity orpreparation foradulthood.However,ithasbeendiscoveredthatitbecomesnecessarytocopewithone 's own behaviour,especiallyin uncomfortable situations, and also thebehaviour of others.

2.2 Determination ofadulthoodbiologically,socially, historically andlegally

AccordingtoCentreforProductiveLongevity(2013),determinationsofadulthoodareo ften inconsistentandcontradictory;apersonmaybebiologicallyanadult,andhaveadult

behaviourbutstillbetreatedasachildiftheyarebelowthelegalageofmaturity. Conversely,onemaylegallybeanadultbutpossessnoneofthematurityandresponsibility thatmaydefinean adultcharacter.Biologically,anadultisahumanbeingorotherorganism thatisofreproductiveage(sexualmaturity).Inhumancontext,thetermadultadditionally hasmeaningsassociated withsocialandlegalconcepts;for example,alegaladultisalegal conceptforapersonwhohasattainedtheageofmaturityandisthereforeregardedas independent,self-sufficient,andresponsible.Biologicaladulthoodgenerally,therefore, beginsaround10or11yearsof ageforgirlsand11or12 yearsof ageforboys,thoughthis willvaryfrompersontoperson,becausetheterm‘adult’ismostoftenusedwithoutthe adjectivesocial orbiological, andsincethe term is frequentlyusedto referto socialadults, some writershavetakenthe meaningof thetwo words phrase‘biological adult’ to begin at the end ofphysical maturation ratherthan theonset of puberty.

Socially: Socially,adulthoodsplitsintotwo formsafterthesocialconstructofadolescencewas created. Thus,therearenowtwoprimary formsofadults:biologicaladults(peoplewho haveattainedreproductiveability,arefertile,orwhohaveevidenceofsecondary sex characteristics)andsocialadults(peoplewhoarerecognizedbytheirculture and/orlawas being adults) (CPL, 2013).

Historically: Historically andcross-culturally,adulthoodhasbeendeterminedprimarily by thestartof puberty(theappearanceofsecondary sexcharacteristicssuchasmenstruationinwomen, ejaculationinmen,and pubic hairinbothsexes).Inthepast,apersonusuallymovedfrom thestatusofachilddirectlytothestatusofadult,oftenwiththisshiftbeingmarkedbysome typeofcoming-of-agetest or ceremony(CPL, 2013).

Legally: Legally,adulthoodmeansthatone canengageina contract.The same or a different minimum agemaybeapplicable to,forexample,parents losingparenting rights andduties regarding thepersonconcerned,parentslosing

financialresponsibility,marriage,voting, having ajob,serving inthemilitary,buying/possessing firearms(iflegalatall),driving, travelling abroad,involvementwithalcoholicbeverages(iflegalatall),smoking,sex, gambling (bothlottery andcasino)beingaprostituteoraclientofaprostitute(iflegalatall),beingamodeloractorinpornography,runningforPresidency,etc.Thelegaldefinition ofenteringadulthoodusuallyvariesbetweenages16and21years,dependingontheregion in question. Some cultures in Africadefine‘adult’at age13years. (CPL)(2013)

2.3 Classificationofadulthood

In the past, the effectiveadultyears were regarded as comprisingtwo stages;

- Earlyadulthood which is from 18 to 40yearsand
- Matureadulthoodwhichisfrom40to65years;afterwhichretirement

beginsandthe ‘elderly’orolderadultisrelegatedtoenjoying“thegoldenyears”.That picture nolonger portraysdemographicrealitiesbecausepeopleareliving substantiallylongerlivesinbetter health.

Inlightofthis,theCenterforProductiveLongevity (2013)proposedaconceptof adulthood that falls into threestages:

- Thefirst stageofearlyadulthood from 18-40
- Thesecond stageofmid-adulthood from 40-62
- A new stageof matured-adulthood, from 62-85

Firstly,CPL (2013)foundthatproductiveactivities(i.e.activitiesthathadvalues)areas importantafactor forolderpeopleas foryoungerpeopleinattainingasecureand balanced life. Productive activitiesinclude continuedemployment forpay, entrepreneurial endeavours,variouskindsofvoluntary efforts,childcareandeldercare,andanythingelse that adds value to the society.

Secondly,thebelief thathumanintelligence grows,increases,andmaturesuptotheage of around 18,further maturationthenceases,andthatallintellectualdevelopmentthereafter

takeplacesimply by thelearningexperience.Thisbeliefhasthe dysfunctionaleffectof giving support to the view that no further intellectual growth occurs after the age of 60 or 65 and, indeed that we all go downhill from there.

However,50yearsofresearchby oneoftheco-authorsandcolleagueofCPL(2013) discoveredthatadultsinmanagementlevelworkshave demonstrated thatthisbelief isnot true.Theirstudy showedconclusively thataperson'spotentialcapability(i.e.skillsin action)continuestoincreasenotonly throughchildhoodandadolescencebutalso throughoutthewhole ofadultlife uptoandevenbeyondtheage of85yearsfor people workingatthislevel.Thisgrowthisatruematurationofinnatehumanpotential.Individuals havebeenfoundtoprogresswithintheirrespective capability boundsbutnottocrossover betweenbonds.Thus,older adultswillcontinuetomature withintheir bondseven after retirement, so longas theyremain engaged in ordinaryactivelife.

Thisgrowthoccursatitsownrateandcannotspeedup by specialeducationalor occupationalopportunities;neitherdoesitneedanysuchopportunitiestoadvance.Itsimply requires the ongoingstimuli of aperson's everydaylife. Erickson'sviewascitedbyWilliams(1973)isthatofthreestagesinaman'slifespanbefore hecompleteshisdevelopment,whichisinlinewiththebeliefofCPL (2013). Ithasthree stageswhich are: (i) Youngadulthood (ii) Adulthood (iii) Senescence

Youngadulthood(18-40):Inthisperiodofyoungadulthood,theindividualnowlaunched onhisownmustresolvethecoreproblemsofintimacy versusisolation.Ifheachieveshis goals,heisabletobuildanintimaterelationship.Ifnot,hebecomesincreasingly isolated from others. These are theyears ofcareerbeginning, ofestablishing one's ownhome, ofstartingyoung childrenontheirwaythroughthesamelifestages andearlystrugglestomakeone'swayin the world.

Adulthood (age40-60): Duringtheperiod ofadulthood, the coreproblem theindividual facesis'generatively'versus'self-

absorption'.Thechildrenhavenowgrownandgoneto maketheirownlivesinturn.Thesearetheyearsof"empty nest"(whenchildrenleave home)thecoming totermswithwhatlifehasofferedandoffinding expressionforstored learningin passingon life's teaching.

Senescence (age 60-80): Inthe laststage of life (oldage,senescence) the finalcore problemisresolvedbetween'integrity' and'despair'.Dependingon one's resources atthis stage,there iseitherapredominantsenseofwholenessandcompleteness,orasenseof distaste,ofbitterness,ofrevulsion,andofwonderingwhatlifewasallabout.Iftheoutco me oflife'sbasicexperiencesandaproblemhasbeenpositive,theindividualarrivesatolda ge arich person,richinthewisdomoftheyears.Building oneachpreviouslevel,his psychological growth hasreached its positivehuman resolution (William, 1973).

2.4 Physiological changes inadulthood

Bodygrowthdeclinesin adulthood.Physically,earlyandmiddleadulthoodismarkedbya slow,gradualdeclineinbody functioning,whichacceleratesatoldage. Themusclemass continuestoincreasethroughthemid-20s,thereaftergradually decreasing. Theskeletal massincreasesuntilage30or soandthenbeginstodecrease firstinthepelvisandspine andlastinthe(peripheralskeleton)fingersandtoes. Throughoutadulthood,thereisa progressivedepositionofcholesterolinthearteries,andtheheartmuscle eventually grows weaker even in theabsenceof detectablediseases(TheNew EncyclopediaBritannica).

There isalsoclearevidencethatwithincreasingage,adultsdisplay aslow,very gradual tendency towarddecreasingspeedofresponseintheexecutionofintellectualandphysical tasks. Slowingratesofelectricalactivity intheolderadultbrainhavebeenlinkedtothe slowing ofbehaviouritself. Thisdeclineinthe rateofcentralnervoussystemprocessing doesnotnecessarily imply asimilarchangeinlearning,memory,orotherintellectual

functions.However,thelearningcapacityofyoungadultsissuperiortothatofolderadults, intheirabilitytoorganizenewinformationintermsofitscontentormeaning.Olderadults, Ontheotherhand,are equalorsuperiortoyoung adultsintheircapacity toretaingeneral information and in their accumulated cultural knowledge(EncyclopediaBritannica).

2.5 Fundamental needs of nutrition

Foodisfundamentaltohuman survival,inmorethan justoneway.First, foodisbasicfor avertinghungerandmaintaininghealthforeveryhumanbeing.Secondly,foodsatisfiesour palateandmakesushappyandemotionallyandsociallycontent.Thirdly,foodconstitutes a formofculturalexpression.The food we eatshouldbe safe,palatable, affordable,andof thequality thatcanmaintainmental,emotional,physiologicalandphysicalhealth.Even withglobalizationthathasseenfood movementstoandfromdifferentpartsof the world, formostpopulationsinAfrica,foodisstillverylocale-specific,especially intherural farmingareaswhereitisproduced.Manylocallyproducedfoodshavebothnutritionaland intrinsic value (Oniong'o*et al*. 2003).

Humansneedfood inthe rightproportionand combinationfor survival. Foodsprovide caloriesandother substancesneededforgrowthandoptimalhealth(Srilakshmi,2006). Goodhealthdependsonadequatefoodsupply andthis, in turn,dependsonsound agriculturalpolicy andgoodfooddistributionsystem(Davison*etal*.,1975).Although peopleeat foodformanyreasons,themost compellingreasonisthat calories,nutrients,and othersubstancesare neededforgrowthandhealth(SizeandWhitney,2000).Therefore, betternutritionandhealthy livingrequireanunderstandingoffactorsthatinfluencewhat weeat, sincethe healthand the nutrition of adultis important as their eating behaviourand nutrition will affect theirfuturehealth. (Oniang'o*et al.,* 2003).

Good nutritioniscrucialtohealththroughoutthelifecycle. Appropriate nutritionalintake isimportantstarting fromthepre-conceptionstageandcontinuing throughtotheageing process. Humannutritionalneedchangethroughoutthelifecycle,requiring adjustmentin thetypesand amountseatentomaintainoptimal healthandgrowth(Oniong'o *etal.*,2003).

Therefore,humannutrientrequirementsdependontheage,sex,body compositionand natureofthe activity ofindividuals.Anadultrequiresnutrientsformaintenance,whileinfants andchildrenneedthemfor bothmaintenanceandgrowth.Nutrientrequirementsduring childhood areproportionaltothe children'sgrowth rate(AlbonandMukherji, 2005). Nutrientrequirementsarerelatedtobody weightandheightamongadults.However, there are inter-individualdifferencesinthe nutrientrequirement,evenbetweenindividualsof thesameage,sex,andbody weight.Nutritionalrequirementsforthematuredadultsand older-adultsarenotfundamentallydifferentfromthoseoftheyoungadult(Mitchell*etal*. 1976).

2.6 Nutritional needs inadulthood

Adultsneedfoodtomaintainandrepairthebodyandkeephealthy. Theamountofdaily activityaffectsenergy andnutrientrequirement,andmealsshouldbeplannedaccording to theseneeds. Nutrientsrequirementsaredeterminedtosomeextentbybodysize. Onthe whole,womenneedlessfoodthanmen,buttheyneedmoreironbecauseofmenstruatio n andtheirnutrientsrequirementschangeduringpregnancyandafterthebirthofababy.S ince the majorityofadultsarewithintheiractivelife,mealsforactivelifepeoplemustprovide sufficientenergywhilekeepingtodietarygoalsofreducedsaturatedfatsandincreased carbohydrate food. Extrawater and saltshould betaken in veryhot weather(Tull, 1996).
Asaresultofchangesinnutritionalrequirementsaswemovethroughdifferentlifestage

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whichplaceextrademandsonthebody,theseextrademandsplacedonthebodymustbe metbyourdailydietstomaintainthebestofhealth. Therefore,tobefitandhealthy throughoutadulthooditisimportanttotakeintoaccounttheextrademandsplacedonth e bodybythese changes throughawidevarietyof regular nutritious foods such as:

- Wateron adailybasis.
- Enough kilojoules forenergy, with carbohydratesas the preferable source.
- Adequate protein forcellmaintenanceand repair.
- Fat-soluble andwater-soluble vitamins.
- Essential minerals such as iron, calcium and zinc.
- Foodcontainingplant-derivedphotochemicals,whichmayprotectagainstheart diseases, diabetes, somecancers, arthritis,and osteoporosis.
- Avarieddietthatconcentratesonfruits,vegetables,wholegrain,legumes,dair y foods,and lean meats canmeet thesebasicrequirements(FLS, 2013).

2.7 The concept ofhealthybehaviour

Healthy behaviourasaconcepthasreceivedconsiderableattentionfromresearchers particularly thoseinthefieldofhealthpromotionandhealthmaintenance.The various definitionhasbeensuggestedandabroadandinclusivedefinitionofhealthby Kasland Cobbascited by Adegoke(2010)isany activity undertaken byapersonbelievinghimself tobehealthyforthepurposeofpreventingdiseaseordetectingitinanyasymptomaticsta ge. Inthebroadersenseaccording toOlayinka,citingGlanz,LewisandRimer(1997)healthy behaviourreferstotheactionsofindividuals,groups,andorganizationtothoseactions, determinants,correlates,andconsequences,including socialchange,policy development and implementation, aimed at improving copingskills and enhancequalityof life.

Healthy behavioursincludeobservableovertactions,thementaleventsandfeedingstates

thatcanbe reportedandmeasured.For instance,personalattributessuchasbeliefs, expectations,motives, values,perception,andothercognitiveelements,personality characteristics,effectiveandemotionalstatestraits,andovertbehaviouralpatterns,act ions, andhabitsthatrelate tohealthmaintenance,healthrestoration,andhealthimprovement. (Adegoke, 2010)

QualityoflifeisdefinedinPublichealthandMedicineasaperson'sperceivedphysicala nd mentalhealthover time.These includefactorssuchashealthrisks,andconditions, functionalstatus,socialsupport,andsocioeconomicstatus(PANE,2012).Anindividu al's demographic characteristics,socioeconomic condition,adequate and appropriatenutrition, accesstobasicsocialamenitiessuchasfood,waterandelectricity havebeenfoundtobe highlycorrelated to health and nutrition status of allpeople.

Factorssuchas age,gender, townshipstatus,andethnicity,whicharefundamentalto demography,cancontributeinoneformortheothertothequality oflifeandnutritional statusoftheadults.SomeresearchesonnutritionalassessmentinAfricaobservedthatso me olderpeopleindevelopingcountriesenterold-ageafteralifetimeofpoverty and deprivation,adietthatisinadequateinquality andquantity,alifetime ofdiseaseandpoor access to health care(Olayinka, 2006).

Therefore,healthylifestyles,early detectionofdiseases,immunization,andinjury preventionhavebeenfoundtobe effectiveinpromoting thehealthandlongevityofolder adults. Theenjoymentsoffoodandnutritionalwell-beingalong withotherenvironmental influenceshavean influenceonhealth-relatedqualityoflifeandtheageingprocess(PANE, 2012). Beginningearly inlife,eatinganutritiousdiet,maintaininghealthybodyweight,anda physicallyactivelifestyle arekeyinfluential factors in helpingindividuals avoid the physicaland mental deterioration associatedwith ageing(Kornman, 2006).

Ingeneral,qualityoflife(QoLorQOL)istheperceivedqualityofanindividual'sdailylif e, thatis,anassessmentoftheirwell-beingorlackthereof.Thisincludesallemotional,social, spiritual and physical aspects of the individual's life.In health care,**health-related quality oflife**(HRQoL)isanassessmentofhowtheindividual's well-being

maybeaffectedover time byadisease, disability, or disorder (in this casefoodhabits).

Aswithanysituationinvolvingmultipleperspectives,patients'andphysicians'ratingof the sameobjective situationhas beenfoundtodiffersignificantly.Consequently,health- relatedquality oflifeisnowusually assessedusingpatientquestionnaires.Theseareoften multidimensionalandcover physical,social,emotional,cognitive,work-orrole-related, andspiritualaspectsaswellasawidevarietyofdiseaserelatedsymptoms,therapyinduced side effects, and even thefinancial impact of medical conditions.

Inthisstudy,theHealthrelatedquality oflifewasusedtoassesshowthe respondentswell- beingmay beaffectedbytheireatinghabit.Thiswellbeingwasassessedunderdiverse sections, called subscaleswhich include,

RolePhysical(RP): Thissubscaleassessestheeaseofperformingsomethingsby therespondent.Italsoassessesifthey are limitedinanykindortheyaccomplished less.

Physical Functioning(PF): This assesses the physical functioningof therespondent and questions about the abilityto climb several flights, to moderate activity, to batheor dress self.

BodilyPain(BP): Thissubscalelooksatiftheirbodyhasbeeninanywayaffected with bodilypain.

GeneralHealth(GH): Thissubscalelooksatthegeneralhealthoftherespondents. It examines whether they getsickeasily,iftheyarehealthyasanybody,iftheirhealth worsens or iftheirhealthis excellent.

RoleEmotional(RE): Thissubscaleassessestheemotionalwellbeingofthe respondents, looking at iftheyworked lesscarefullyor theyaccomplished less.

ReportedHealthtransition(RH): Thissubscalecomparesthepresentstateofthe respondent's health compared to ayear preceding the interview.

PhysicalHealth(PHH): Thissubscaleisanoverallscaleforthephysicalhealthof therespondentsandincorporatesothersubscaleslikeRolePhysical (RP),Bodily Pain (BP), General Health (GH)

Vitality(VT): Thissubscalelooksattheoverallvitalityoftherespondents,assessing if they'vefeltworn out or tired in theprecedingdays.

MentalHealth(MEH): Thissubscalelooksattheoverallhealthoftherespondents. ItincorporatesothersubscaleslikeVitality (VT),SocialFunctioning(SF),Role-Emotional (RE),and Mental Health (MH)

SocialFunctioning(SF): Thissubscaleassessestheoverallsocialimpactaspectof the respondent's life.

2.7.1 Importanceof nutritionto quality oflifeandhealthy behavior

Forhumanbeings,foodisacriticalcontributortophysical well-being;itis amajorsource ofpleasure,worry andstress,amajoroccupantofwake-uptimeandacrosstheworld,the singlegreatest categoryof expenditures(Rozin*et al*., 1999). The healthandNutritionof adultsareimportantastheir eatingbehaviourandnutritionwill affecttheirfuture health.Numerous studieshave reportedonthesignificantimpactof dietary intakeonhealth,independenceandqualityoflifeinthepeopleofallages(Young HeeLee,updated; Wickrama *etal.*,2012) froma baseline datafroma larger intervention study ofmid-lifeandolderAfrican-Americansincorporatedaquasi-experimentaldesign, theresultofthefindingshowedthatolder AfricanAmericanswithmorecumulative life adversity,asreflectedby highlifedissatisfaction,hadsignificantpoorereating behaviours including theconsumptionofahigh-fatdietandlowintakeof fruitsand vegetables.Older AfricanAmericans'dietarychoiceswerealsoassociatedwiththeirperceivedsocialsup port.
Moreimportantly,perceivedsocialsupportactedasabuffertomitigatetheinfluenceofl ife dissatisfaction on olderAfricanAmericans' eating behaviours.Lifedissatisfaction places olderAfrican Americansat risk of unhealthyeatingbehaviours.

Therefore,whenplanningthecareofmaturedadults,itmustbeunderstoodthatfoodhabits make asignificantcontributionto theirwell-being andfoodhabitsofalladultsare determinednotonly by lifetimepreferencesandphysiologicalchangesbutby suchfactors as livingarrangements, finances, transportation, and disabilities (Bengmark,2006).

2.8 Originof foodcultureand habits

The culturalbackgrounddetermineswhatis eatenaswellaswhenandhow. A peoples' culture hasalotofinfluenceonthekindoffoodpeopleeatineachcommunity.Inevery partofsociety,peoplehavediversefeedinghabitsthathavebeen inheritedfrom generationtogeneration(Oniong'o*etal.*,2003).Theyexactdeepinfluenceonthebehaviour of thepeople.Theculturalbackground determineswhatshallbe eatenaswellaswhenand howitshallbeeaten(Whitney andRolfes,2008).Foodhabitsarebaseduponfood availability,economicorsymbolism,the agriculturalpracticeofthepeople,economy and marketpractices,historyandtraditions,andthegeography oftheland(William,1973). Culture influencesfoodhabits bydictating whatisorisnotacceptabletoeat(Amy,2008). Whatisacceptableasfoodinonepartoftheworldmay berejectedinanotherplace, thereforepeoplelearnfromtheircultureandsociety whichanimalsandplantsare consideredas food and thosethat arenot (Brown,2008).

Allpeople havetheirlikesanddislikesandtheirbeliefsaboutfood,andmany peopleare conservativeintheirfoodhabit.Theytendtolikewhattheirmotherscookedforthemwhen they wereyoung,thefoodtheywereservedonfestiveoccasionsortheeatingwithfriends and families awayfrom home duringtheir childhood (Mattithias, 2001).

Food,cooking,andeatingplayacentralroleineveryculture. Eatingisneverapurely biologicalactivity sincetheconsumptionoffood,whetheritissimplyorelaborately prepared, isalways imbued withmeaning,which isunderstoodand communicated in various symbolic ways (Mervyn, 2012).Preparing foodforconsumptionandeating socially,areactivitiesthatare conductedfor

purposesotherthannutrition,hence,the symbolicmeaningoffoodsometimeshaslittle to dowiththefooditself,andeatingsocially haslesstodowithnutritionthanwith communication and relationships (Anastassia*et al*., 2011).Thetechniquesutilizedtoprepareandprocessfoodsandthewaysofservingandc onsuming themvary fromculture toculture,whichalsohasanimportantinfluenceonthe socialand familyrelationship (Adebusoye*et al*., 2012).

2.8.1 Foodandculture

Cultureisusedtechnically todescribeanorganizedgroupofpeopleinteractingina structuralsystemandcarryingouttheactivitiesnecessary toproduceandsustainlife (Encyclopedia Americana,1989).Culturecanalsobe referredtoasa pattern of thinking anddoingthatrunsthroughtheactivitiesofa populationanddistinguishesthemfromall otherpeople (Encyclopedia Britannica, 2007).Culturedetermineswhat foodis,hencewhatisconsideredtobefoodinoneculturemaybe regardedwithdisgustormayactually causeillnessinpeopleofanotherculture(Williams,1973).

TheAmericans valuemilkasbasicfood,whileinmanyotherculturesitisrejected withrevulsionasananimalmucousdischarge.The*Ifugao*tribesmenof NorthernLuzonin Philippineareknownfortheirenjoymentofdragonfliesandlocustwhichtheyboil,drya nd grind into apowder, while crickets, flyingred ants, beetles, and water bugarefried inLard (Williams,1973). Aculturalgroupprovidesguidelinesregarding acceptablefoods,food combinations,eatingpatterns,andeatingbehaviour.Acceptanceoftheseguidelinescr eates asenseof identityand belongingforthe individual (Haviland*et al*., 1990).

Withinparticularpeer,work,orcommunity,groupsimpactfoodbehaviours.Forinstan ce, ayoung personatabasketballgamemayeatcertainfoodswhenaccompaniedby friends, andanotherkindoffoodswhenaccompaniedbyhisorherteacher.Etiquetteandeatingh abits

alsovarydependingonwhetherthemealisformal,informalorspecial(Suchasamealon abirthdayor religious holiday)(TheNew Encyclopedia Britannica, 2007 (a) Vol. 3).

2.8.2 Food habits

Foodhabitsareamongtheoldestandmostentrenchedaspectsofmany culturesthatexert a deepinfluence onthebehaviourofpeople(Oniong'o*etal*2003).Habitsrefertoany regularlyrepeatedbehaviourthatrequireslittleornothoughtwhichisnotinnatebutlearned.

Ahabitcanbepartofanyactivityorbehaviourrangingfromeatingandsleepingtothinking andreacting,whichisdeveloped throughreinforcementand repetition(The New EncyclopediaBritannica2007(a)).Ouremotionandmotivation are productsofhabits.Our appealsandfear, tasteinfood, dressing,prejudices,andappetite are alllearned(The EncyclopediaAmericana1989).Peoplesometimesselectfoodsoutofhabitsuchaseating cerealsevery morningforbreakfast.Eatingfamiliarfoodandnothavingtomakeany decision can becomforting(Whitney&Rolfes, 2008). Foodhabits,likeother formsofhumanbehaviour,are theproductofpersonal,cultural, socialandpsychologicalinfluence(Williams,1973).The term'eatinghabits'or 'food habits'refertowhy andhowpeopleeat,whichfoodthey eat,withwhom they eat,aswell asthewayspeopleobtain,store,use,anddiscardfood.Acrosssectionalstudy conducted among 132medicalstudentsofthe preclinicalphaseinaMalaysianUniversityobservedthat morethanhalfofrespondentshadmealsregularly and40.2%hadmealsofatleastthree timesperday.Smokingandalcoholconsumption were significantlyassociatedwitheating habitinthisstudy.The majority(73.5%)consumedfruitslessthanthreetimesperweek,51.5% hadfriedfoodtwiceormore aweekand59.8%drankwater lessthan2litersdaily.Eating habitsscorewassignificantlylowamong youngerstudents(18–22 years),smokers,alcohol drinkersandthosewhodidnotexercise(p<0.05). Four

psychological factorsoutofsix weresignificantlyassociated with eatinghabits (p<0.05). Mostof thestudents in this study hadhealthy eating habits.Socialandpsychologicalfactors wereimportantdeterminantsof eatinghabits amongmedical students (Kurubaran*et al*., 2012).

Kimura*etal*.,(2012)inhisstudy inTosstowninJapanamongtheelderly inTosstown Japanobservedthattheproportionoftheelderly whousually eatalone was33.2%inthe studypopulationof856.Evenamong697elderlysubjectswholivewithothers,136persons (19.5%)atealone.Theparticipantswhoatealoneweresignificantlydepressedaccordingto theassessmentusingthe GDS-15score.Body MassIndex(BMI)waslowerintheelderly subjectswho ate alone than thosewithothers.A significantcloseassociationwasfound betweeneatingaloneandlowerfooddiversity.Bythemultivariateanalysis,depression was independentlyassociatedwitheatingaloneinthelogisticregressionmodeladjustedfor age, sex,BodyMassIndex(BMI)andfooddiversityasconfoundingfactors.Fooddiversity was alsosignificantly associated,evenaftertheadjustmentoftheseconfoundingfactors. Individual, social, cultural, religious, economic,environmental and political factors all influencepeople's eating habits.

2.8.3 Foodchoices

Thefoodchoicepeoplemakeisnotdrivenbyaneedfornutrientsorguidedby food selectiongenes. Humansare bornwithmechanismsthathelpthemdecidewhenandhow muchtoeat. Aninbornattractiontosweettastingfoods,adislikeforbitterfoods,andthe responseofthirstwhenwaterisneededallinfluencefoodandfluidintaketoanextent (Brown, 2008). However,inborntraitsthataffectfoodchoicesarenotveryfine-tuned;as peoplemayover consume sugarandsalt,for example,andunderdo(forinstance,drinktoolittlewater in responsetothirst)theirresponsetointernalcues(Brown,2008). Thestrongsymbolic,

emotional, and culturalmeaningsof foodcome to lifein theform offoodpreferences. We choosefoodsbasedonourculturalbackground andother learnedexperiencesthatgive us pleasure(WHO 2003).

Cultureisanotherfactorinfluencingfoodchoice.Cultureinfluencesfoodhabitsbydict ating whatisor isnotacceptable toeat(Amy,2008).Whatisacceptable asfoodinone partof theworldmayberejectedinanotherplace. Therefore,peoplelearnfromtheircultureand society whichanimalsandplantsareconsideredfoodandwhicharenot(Brown,2008). Culturaltraditionsregardingfoodareflexible,andthey keepevolvingaspeoplemove about, learn about new foods, and teach others (Sizer and Whitney, 2000).

Foodsgiveuspleasurewhenthey relieveourhungerpangs,delightourtastebuds,or providecomfortandasenseofsecurity.Wefindfoodpleasurablewhenthey outwardly demonstrateoursuperiorintelligence,ourcommitmenttototalfitness,or ourprideinour ethnicheritage,andsowerejectfoodsthatbring usdiscomfort,guilt,andunpleasant memories and thosethatrun contraryto our values and beliefs (Brown, 2008).

Althoughmostpeoplerealizethatfoodhabitsaffecttheirhealth,theyoftenchoosefoodf or otherreasonsapartfromnutrition. Thesereasonsincludevariety,pleasure,traditions, association,andnourishment,aswellastheability tocombinefavoritefoodswith a nutritionally balanceddiet(WhitneyandRolfez,2008).Every day,severaltimesaday, people make choicesthatinfluencetheir body'shealthforbetterorworse,andthat each day'schoicesmay benefitorharmthebody alittle. Butwhenthesechoicesarerepeated overtheyearsanddecades,theconsequencesbecomemajor. Therefore,payingclose attentiontogoodeatinghabitsnowcanbringhealthbenefitlater.Byandlarge,carelessn ess aboutfoodchoicecancontributetoomuchchronicdiseasesprevalenceinlaterlifeinclu ding heart disease and cancer(Amy2008). Thereare many factorsthatdeterminewhatfoodsapersoneats. Inaddition,topersonal preferences,therearecultural,social,religious,economic,environmentalandevenpol itical factors.Astudy onDietary diversityandfoodexpenditure

asindicatorsoffoodsecurityin olderTaiwanesefoundthatitcostmoretoachieveagreaterDietaryDiversityScore(DDS). Thefoodexpenditureofsubjectswitha dietary diversity scoreof6was2.20timesgreater thanthedietarydiversity score<3groupsaftercontrolling forcovariates. Eldersoflower socioeconomic statustendedtochoose foods which wouldhave costless. The sub-group ofelderswhoachievethehighestDDSwithlimitedmoneyofferapproachestofood-money management.Nutritionpolicydirectedtofoodinsecuregroup,liketheaged,couldemploy health promotionstrategies which reducefinancialbarriers to healthyeating.

Every individualhasuniquelikesanddislikesconcerningfoods,whichisdevelopedover time and areinfluenced bypersonalexperiences such asencouragement toeat, exposureto afood,family customsandrituals,advertising,andpersonalvalues(Stark,1975).People decidewhattoeat,whentoeat,andevenwhethertoeatina highlypersonalway,oftenbased onbehavioralor socialmotivesrather than onawarenessof nutritionimportance to health.Manydifferentfoodchoicescansupportgoodhealth;anunderstanding ofnutrition helpstomakethe sensibleselectionmoreoften. Somereasonsidentifiedformany people's choicesoffoodincludetaste,andotherwidely sharedpreferencesincludesweetnessof sugar,orthesavourinessofsalt,andlikinghighfatfoods(Whitney andRolfes,2008).In Europe,Simpson*etal*.,(2011)inherstudyonthe predictorsoftasteacuityinhealthyolder Europeansreportedthatthemainpredictorsoftasteacuity wereage,sex,socialclassand country, which had differential effects for each taste quality. Thestudysuggeststhat socio-demographicandculturalfactorsshouldbetakenintoaccountwhenconsideringtasteacuity in older people.

Today,manypeopleeatfoodthatisaccessible,quickandeasytoprepare,andwithintheir financialmeans.Consumersvalueconvenienceandarewilling tospendmore

thanhalfof theirfoodbudgetonmealsthatrequirelittleornofurtherpreparation.Theyfrequently go out,bringhomeready-to-eatmeals,orhavefooddelivered.Evenwhentheyventureinto thekitchen,theywanttoprepareamealin15-20minutes,usingnothinglessthanhalfa dozen ingredients which arealso semiprepared (Sizer and Whitney, 2000).

2.8.3.1 Determinant offoodchoices andeating behavior

Generally,people'sdecisions of what toeat and wheretoeatare often based onbehavioral orsocialmotives;andin mostcases,theawarenessofnutritionimportancetohealthisnot considered(AlbonandMukherji,2008).Cultureisanotherfactor influencingfoodchoice. Culturemaybedefined as the wayof lifeof a group ofpeople usuallyof onenationalityor froma particularlocality (Michel*etal*.,1976).Cultureisanintegratedpatternofhuman knowledge,beliefs,customs,taboos,codes,institution,tools, techniquesandworksofart, rituals,ceremonies,andotherrelatedcomponents.Italsoincludesallcapabilitiesandhabits required bymanas amemberof society(Encyclopedia Britannia, 2007(a)).

Thereisnodoubtthatadietcompatiblewithhuman biologicalneedisessentialtothe survivalofthespecies.Therefore,anunderstandingofthefactorsthatinfluencefoodhabits willhelpagreatdealinitsmodification(Stilakshmi,2008).The foodthatisconsumed actuallydepends uponavailable foodsupplies andacceptabilityof thefoods by the consumers. There aretwo majorinfluences on food consumption namely:foodsupplyand consumer demand(Caliendo, 1981).

Many otherresearchershavetriedtoexplainthedeterminantsoffoodhabitsandnutrition behaviour.However,many non-biologicalinfluencesonfoodchoicesandbehaviourhave alsobeenidentified by sociologistsandanthropologists.Forexample,whenMaslow's hierarchyis applied tofood habit, eatingfor survival evolves into eating to satisfytheneed

forsecurity,thenforbelongingness,thenforself–esteem,andfinallyforself-actualization (Ikedan/d).

Differentframeworksoffoodchoicebehaviourhavebeendevelopedbysocialscientists. Infoodchoiceresearch thatinvestigateshowpeoplechoosethetype offoodtheyeat,the theoreticalmodelsofbehaviourincludebothindividualandenvironmentalfactorsaffecting themodificationofbehaviours.However,socialcognitivetheoryexaminestherelationship andinteractionbetweenenvironmental,personalandbehavioralfactors,andfoundthatfood choicecomprises psychologicaland sociologicalaspectswhichincludefood politicsand otherfactors(suchasreligion,vegetarianism,anddietary law),economicissues(suchas howfoodpriceandmarketingcampaignsinfluencechoice),andsensoryaspect(suchas the studyoforganolepticqualitiesoffood). Thefindingsshowedthattastepreferenceand sensory attributemostlyguidepeople'sfoodchoice(WikipediaFoundationInc.,2012). Other factorsincludecostavailability,convenience,cognitive restraints,andcultural familiarity.

In Sweden, astudybyZadaPaialic*et al*., (2012)on the experienceof elderlypeopleliving athomerelatedtoreceiving mealsdistributed by amunicipalinthecountry reportedthat theexperiencerelatedbytheparticipantsinthestudy indicatedthattheyweregenerally satisfied,withthefooddistributionsystemfromtheirmunicipality.Thestudyalsoindicated thatthemealboxwasexperienced by theelderlypersonsparticipating inthestudyas a symbolofdependencyandlossofidentityasitbecameevidenttothemthatthey couldnolongergotothemarkettobuyandpreparefoodby themselves.Thisstudyindicatesthat greater attention needs tobepaid towards meeting the practical and psychological needs of elderlypeople;fooddistributionshouldnotbeseenasafragmentarysocialsupportbutas a pointtowardsbreaking theelderly socialisolation,toactively

involvethemindecision making, and preventingthem from havingfeelings of dependencyand loneliness.

Moreover,environmentalcuesandincreasedportionsizesplay agreatroleinthechoice andquantity offoodeatenbyindividuals.Dietaryintakeandnutritionareresultsof"life-style"whichistermedasthe complexinteractionof a large seriesof social,culturaland situationalinputs.Lifestylevariablesincludehouseholdstructuralfactors(numberofpeople inthehousehold,age, sex,spacing betweenchildren,divisionofduty inhouseholdtasks, decisionmaking powerwithinhousehold,education,occupationandemploymentof householdmembers,attitudestowardshealthy families,childrearing,religion,socialand culturaltraditions,migrationhistory;geographical,socialandeconomicresources,placeof residence(urban/rural)and health status (Srilakshmi, 2006).

Goodnutritionalstatusis dependentuponeachpersonhaving an appropriateintakeofmacro- andmicronutrients,combinedwithadequatehealthcare andaccesstosafedrinking-water. Nutritionalstatusalsodependsontheavailabilityofsufficientknowledgeaboutappropriate diet,taking intoaccountlocalfoodhabitstopreventproblemsofundernutrition,andof diet-relatednon-communicablediseases.Conditionsforachievingsatisfactory nutritional statusandensuring continuedaccesstosufficientsuppliesofavariety ofsafefoodsat affordablepricesandofsafedrinking-waterisimportantsothatallpeople,especially the poor and vulnerablegroups, can havenutritionallyadequateand safediet (FAO, 1992).

2.8.3.2 Factors that influencetheway people choose food

Differenttypesof decisionsare involvedwhen anindividualmakesa food choice. They involveacombinationoflifeinfluencingfactorssuchasGeography, Lifestyle,Physiology, Psychology, Culture, Socialization, New food, Modern food, etc.

2.8.3.2.1 Physical andenvironmental factor

Eithercreate orinhibitaccesstofoodstuff, season,locality (soilorclimate)transportation andmarketing,distributioncostsandpermissibility areenvironmentalfactorsthat contributeto food availability.

2.8.3.2.2 Physiological factors

Theseincludethephysiologicalneedforfood,basichungerandsatiety (thefeeling of having hadenough)factors,linkedwithbothappetiteandaversiontofoods,thesensory appealoffood,personalpreferencesoffoodchoice,andmany physiologically therapeutic diet to which theindividual maybe adhering(AmyandBrown, 2008).

Thefindingsinastudy inSwedenonHome-LivingElderly people'sviewsonfoodsand Mealsby Edfors*etal.*,(2012)indicatedthatfactorssuchasbuyingandtransportationof food,quality offood,cooking,widowhood,illness,andhomecareserviceinfluencetheir dietarypattern.Also, eatingwasinmostcases, relatedtotheiroralhealthanddentalstatus. Somerespondentsthoughtthemeatfromfooddistributionwasleathery anddifficultto chew. Inthestudyhabitsfoundedinpastlife,and negativelifeeventsaffectedthefoodand meals in the present life

2.8.3.3 Factors responsible forpoorfoodchoices

Itisatragicfactthattoday,inanageofadvancedtechnology andscientificknowledge, there arestillmanypeoplein theworld whosehealth and qualityof lifesuffer through lack offoodasaresultofwar,disaster,pollution,politicalfactors,povertyandpoorfoodchoic es (Tull,1996). Wherethechoiceoffoodisseverely inadequate,illness,malnutrition,and deathonalargescaleretheusualresults(Amy,2008).Therefore,thefollowingaresom e ofthefactorsthatcouldberesponsibleforpoorfoodchoicesasidentifiedby Williams (1973):

2.8.3.3.1 Foodfads

Foodfadsarescientifically unsubstantiatedbeliefsaboutcertainfoods,whichmay persist foratimeinagivencommunityorsociety. Somemaybeperfectlyharmless,whileothers havemoreserious implications concerningthe health and welfareof theirfollowers.

AfoodfaddistisonewhofollowssuchfoodcustomsSeaborgforatime. Hemay bean individualfaddistwhosepracticemay haveitsbasisonanacuteorchronicpsychological problemorhemay belongtoagroupwhichthen,acceptedsomerigidstereotypeddietary practicein thebelief thatitwillimprovehealth or curedisease.

2.8.3.3.2Foodmyths: Amythisa traditionallegendwithouta determinable basisof fact; itisaninventedstory,idea,orconcept. Foodmythsare improvedstories orbeliefsabout foodwhichoneacceptedуncritically,or,are usedtojustifyone'sowndesires,interes,and practices.

2.8.3.3.3 Quack

Inmedicine,nutrition,andalliedfields,aquackisafraudulentpretenderwhoclaimstoha ve skill,knowledgeorqualificationswhichhedoesnotpossess.Hismotiveisusuallymone y. Byacruelhoax,hefeedsuponthephysicalandemotionalneedsofpeople.Thefoodquac k exists becausefoodfaddistsexist.

2.8.3.3.4 FoodMisinformation

Tomisinformistogivefalseormisleadinginformation.Foodmisinformationisastatem ent aboutfood which isnotbased upon or isnotinagreement withscientificevidence. False informationmayhavearisenoutofatraditionalfallacy,oritmayrepresentabeliefinmag ic orfolklore.Itmaybebuiltuponoutrightlies,subtlerhalf-truths,innuendos,andinferences that arethe stock-in-tradeof theindigenous quack.

2.8.3.3.5 Scientific nutritional concepts

Opposedtofoodmisinformationisthebodyofnutritionalconceptsthathavebeenbuilto n scientificevidence. Scientifically soundconceptsaretheresultofpersistentresearchand testingover manydecades. Theyrepresent an organized, tested knowledge. Mythsandfadsisanintriguingtestonone'sbeliefstonoticehowsome samplemyths appear in thelight of facts that havebeenamassed byscientificobservers.

2.8.3.3.6 Fallacious Claims byFood Faddist

Typesofclaims:Foodfaddistsmake exaggeratedclaimsfor certaintypesoffood,they assert that:

- Certain foods willcurespecific conditions.
- Certain foods areharmful and should beomitted from thediet.Certain foodscombination is veryeffective asreducing diets and hasspecial therapeuticeffects.
- Only"natural food"canmeet bodyneeds and prevent diseases.

Dangersoffoodfadstohealth:Self-diagnosisandself-treatmentare always dangerous. When theyarebased onquestionable sources, thedangers aremultiplied (Williams, 1973).

2.8.3.4 Otherfactors that caninfluenceeating behaviour

2.8.3.4.1 Physiological Factors Influencing Eating Behaviour

Nutritionalstatusisaffectedbyawiderangeoffactorsthatmay leadtoan inadequateor excessivenutrientintakeormayimpairtheiroptimalutilization.Thefactorsmostdirect ly influencingnutritionareanalyzedunderthecategoriesoffood,healthandcare,andeach of these influenceeachother andare allessentialcomponentsofgoodnutrition(FAOand WHO,1992).Theresultofthestudyby Anastassia*etal.*,(2011)one eating

habitsinolder peopleinGreece: Theroleofage,dentalstatus,andchewydifficultiesrevealedthat increasingagewasassociatedwithincreasedfrequency ofconsumptionoffish,grains,and vegetables.

Impaireddentalstatusandchewingdifficultiesdidnotaffectthefrequency of eatingmeat and otherdifficulties to chewfood,but itwas related to morefrequent consumptionofsofterfood(chicken,fish,grains,anddairy products). TheolderGreeks didnotexcludeanyfoodtype fromtheirdiet,becauseofdentalimpairment. Toovercome chewingproblems,theyusedvariouspreparationmethodstoconsumetheirfavouritefoods. Thedietary patternsoftheolderparticipantsadheretothetraditionalMediterraneandiet greater than thoseof theyounger ones,revealingthevariousculturaland social parameters which influencefoodselection.

Theeatingbehaviourofeveryindividualbothyoungandold areinfluencedbyacomplexset ofinteracting factors. Theseincludethephysiologicalprocessesandpsychological innerspringsofhunger,andhowearly childhoodexperiencesmayhaveaneffecton subsequenteatingbehaviour,andthecauses of eating difficulties.Toconsiderfoodand eatingfromanindividualperspective,andtheunderlying physiologicalprocessesthat influenceindividualbehavior,(AlbonandMukharji,2008)suggestedthefollowing key areasfor exploration.

2.8.3.4.2 Physiological Processes ofEating BehaviourHomeostatic: Themostactivephysiologicaldrivesinmanrelating totheconceptof homeostasisarehungerandthirst. According toCardwell*etal.,*(1998)ascitedby Albon andMukherji,(2008)theterm“homeostatic”describesthemechanismbywhichourbodies try tokeepinternalprocessesinbalance.Thebody worksbestwhenthereisacorrect balance of chemicals,nutrients,oxygen,andwater available atthe correcttemperature.If foodhasnotbeeneatenforsometime,thebodybecomesshortofenergyandphysiologic

al processes will(setinmotionthat)initiatewithinusadrivetoeat(hunger). Thehungerwill besuppressedoncethe foodiseaten.Thereareother mechanismsinplacethat telluswhen we arefull.Thefoodeatenhastobedigestedbeforethenutrientsaremadeavailabletobeused bythebody.Hence,thereisaneedtoeatregularmealsinordertopreventintensehunger. Severalmechanismsareputinplace toregulateour foodintake. Thesearereportedby Cardwell*et al.,* (1998)as cited byAlbon and Mukherji(2008) as:

- **ThepresenceofFoodintheStomach:**Thereisamechanismbywhichsignalsa resent fromthe stomach tothebrainforfeeling full(satisfaction) when the normal-sized mealis eaten.Thesignalsaresensitivetothequality offoodaswellasquantityasevidence showsthatpeoplefeelfullquickerwithhigh-energy foods.Thosewhohavetheir stomachreduced eitherbecauseofdiseaseortohelpthemloseweightdo reportfeeling fullaftereating very little.However,someindividualscompensateby takingsmall, frequenthighcaloriefoods,andinonestudyreportedby Sjostrom,(2004),25percent ofpatientsregainedalltheweightthattheyhadoriginallylost;indicatingthatsto mach sizewas not the onlyfactor in controllingfoodintake.
- **Cholecystokinimin(CCK):** This hormoneis released from thesmallduodenum when itregisters thepresenceof food.Injectionsof CCK reducethe size ofmealsconsumed byhumanandrats(AlbonandMukherji,2008). TheuseofCCKasanappetite suppressantisbeinginvestigated,butaccording toHorowitz*etal.,* (2005)itisunlikely that itwillproveto be helpful in treatingobesity.
- **Others:**Anotherphysiologicalprocessthathasaneffectonappetiteisthelevelo fblood glucose inthesystem. Enoughglucose isneededintheblood streamto giveenergy. Whenthebloodglucoselevelislow,thebody mayexperiencefaintandweaknessand there isthe needtolookfor food. Peoplewho are diabeticandtake insulinhave tobe particularly carefultobalanceinsulinwithsufficientfood,asthey areatriskof suddenly havingadangerously lowlevelofbloodglucoseandfeelunconscious.The

blood glucoselevel is measured byglucose receptors in the bloodvessels, liver andthe brain,particularly thehypothalamus.However,thebloodglucoselevelinan individual does not varymuch as thebodywillconvert fat stored into glucose.

- **TheRoleofHypothalamus:**
  Thisisasmallstructureatthebaseofthebrain(about thesizeofathumb)thathasanimportantparttoplay intheregulationof eating behaviour. Togetherwiththe pituitarygland,ithelpstocontrolmany bodilyprocessesby regulating theformattingandreleaseofhormones(ChemicalMessenger). Twomain centresinthehypothalamusthataffecteatingbehaviouraretheVentralMedial Nucleus (VMN) and theLateral Nuclear (LN).
- Researchinthelate1940sshowedthatlesionstotheVMNinratsresultedinthera ts overeatingto suchan extent that theybecamemassivelyoverweight.
- Intheearly 1950s,itwasshownthatlesionintheLNinhibitedeatingbehaviourinrats so thattheylostweight.
- Reviewingtheevidence,heconcludedthattheresearchsupportstheideathathy pothalamus hasanimportantroleineatingbehaviour,andinvolving otherareasinthebrainconcerned with emotional responses, such as the frontalcortexand the amygdale.

ImpulsivityonEating

Behaviour: Studieshaveshownthatpeoplethatareobesetendto consumemorefoodmostespecially energy densefatty foodsthannon-obesepeople.One ofthereasonsmaybethateating behaviouristriggeredbythetasteand smelloffoodand that thesetriggershave amorepowerful effect on obeseindividuals. This hasbeen suggestedmay beduetoadeficitinimpulsecontrol.Inthestudy ofobesechildren,itwas foundthatobesechildrenhavelessinhibitorycontrolthanthecontrolgroupofchildrenw ith normalweight,andobesechildrenwhohadepisodesofbingeingweremoreimpulsiveth an those who did notbinge.

StressandDepression: Ithasbeenestablished thatthereisa strong relationshipbetween stressandeatingbecausemostpeoplewhenstressedupatonetimeortheotherhaveturned toa favorablefoodsuchaschocolate orother highfat,andcarbohydrate food.Also,a connectionbetweeneatinganddepressionaswellasanassociationbetweendepression and obesityhasbeen established.Depressionhasbeen shownseemsto affect people's eating habits in two different ways:

- Itisassociatedwithhighlevelsofanxietyandsleeplessness,lackofappetite,andweight lossin some people.
- In others, it is characterized byincreased appetite,excessivesleep,and weightgain.

Eatingasaresponsetostressisrelatedtothephysiologicalmechanismsinthebodythat helpstodealwithsituationsofperceivedthreat(Marano,2006). Ina situationofacutethreat, forexample,whenonefeelsheisindangerofbeingattacked,thereisanimmediate physiologicalresponsebythebody.Thisconsciouscontrolresponsepreparesanindividual for'flight'orfight'.Thehormonecortisolproducedactivatesotherphysiologicalprocesses toincreasetheamountofoxygentothebrainandprepare thebodyforimmediateaction.In a timeofsuchacutestress,theremay berapidbreathingtoincreaseoxygenlevelsandthe heartbeatfastertogetoxygenintothebrainasquickly aspossible. Atthesametime, energy, inthe form ofglucoseis mobilized from stores in thebodyreadytobeused asfuel for muscles. When the danger has passed, the level of cortisol is reduced.

However,ina chronicstresssituation, theproductionofcortisolisnotreduced.Asthebody perceivesitselftobe under constantthreat,thereisa constantdemand for fuel. Insuch situations,itappearsthatthebrainsendsout signalsthatmotivateeating high-density energy-richfoods,suchaschocolate.Theenergyfromthisfoodisstoredasabdominalfat, closetotheliverwheremanyoftheenergy

metabolismprocessesoccur(Marano,2006). Thedepositionofabdominalfatsendsmessagetothebraintocutoffthestressresponse,as reserveshavebeenbuiltup.Thereis,thereforeadirectconnectionbetweeneating‘Comfort foods’ andthe reductionof stress.The connectionbetweenstressreductionand eating energy– richfoodis a powerfulreinforcementand comforteatingis likelyto becontinued as alearned behaviour even in the absenceof physiological cues from thebody.

It has been concluded that notonlydo physiological stress mechanismresult in an increase inconsumptionofenergy-richfoods,butalso,evenwithoutincreasing calorieintake, chronically stressedindividualsmay actually putonmoreweightthanexpectedfromthe calories theyconsume. Therefore, theconclusion is that:

- Stress influences the consumption ofhigh fat, high-sugar food;
- Eatingtheseenergy-richfoodsunderstressleadstoputtingonmoreweightthan expected.

2.8.4 World’s cultural foodpattern

Allovertheworld,culturalfoodpatternsdifferfromonecountrytoanother.Amongethnic groupanddifferenttribesinregionsandstateswithina givencountry,thereexista lotof variationsinculturalfoodpatterns(Williams,1973). Insomecountries,peopleenjoy insectsbutconsidercornandsoybeansfitonly foranimalfeed,whiletherearesteamer clamsandrawoysters’foodpassionsforsome,butabsolutedisquietingtoothers(Brown, 2008). Therefore,inevery partofthesocietypeoplehavediversefeedinghabitsthathave been inheritedfromgeneration to generation (Oniang’o *et al*, 2003).

Peoplelearnfromtheircultureandsocietywhichplantsandanimalsareconsideredasfood andwhichare not.Horsemeatisafavouritefoodinalargeareaof North-centralAsia. Whileporkiswidely consumedinNorthandSouthAmerica,Europe,andotherareas,but itisavoidedbymany peopleinIslamiccountries. Bone-

marrowsoupandsautéedsnails aredelicaciesinFrance,whilekidneypieistraditionalinEngland.The dogisapopularfoodin Borno,NewGuinea,thePhilippines,andothercountries,whereas,the snakeisadelicacy in China.

All cultures havetheir "super foods"or staplefood, for examplein RussiaandIreland, it is potatoes. InCentralAmerica,cornandyucca are superfoods,inSomalia,itisrice. In many partsof AfricaandinNigeriaspecifically,grainsandtuberformthebaseof'super foods'.Thesefoodsrefertoculturalsignificanceandnotnutritionalvalue(Brown, 2008). InAmericacommunity life,forexample,anumberofdifferentculturalfoodpatternsare represented.Many countrieshavecontributeddifferenttypesofdishes ormodeofcooking toAmericaneatinghabits,andinturn,many ofthefoodhabitsofthesesubcultureshave beenAmericanized.Nevertheless,alltraditionalfoodpatternshavestrong meaningsand serve to bind families and cultural communities in closefellowship. It should, however,be notedthateachfoodpatternhasitsuniqueness,andamongpersonsofallcultures,individual tastesvary,geographicpatternswithinacountry vary,andeconomic factorsmakefora widedifference(Williams, 1973).

A fewsamplesof culturalfoodpattern oftheworldareasfollows:

2.8.4.1 ***JapaneseFoodCulture:*** InJapan,thediscussionaboutfoodcanbeserious, passionateandanalytical.AsaresulttheJapanesetakegreatprideinthequalityandpurity oftheirfood,thereforetheirfoodisdedicatedlyandcarefullypresented.Theaveragedaily caloricintake in Japanis 2,754calories,and85thintheworldcomparedto3,825inthe United States (no. 1) and1,500 in theCongo (173rd) (Hays, 2013).

TheJapanesecuisineisoftenseafoodbasedanddoesnothaveany thickspicy sources associatedwithChinesefood. Althoughsweetteriyaki-stylesourcesarecommon,the artistic arrangements of thefooditems served areimportant, when compared with

American standard,theportionsaresmall,butalotofeffortsgointogetting therightingredients, preparation,andpresentationespeciallyatfancyrestaurants. TheJapaneseusechopsticks toeatallJapanesestylemeals. Themethodscommonlyusedinfoodpreparationaregrilling,steaming,stir-frying,deep-fryingandcombinationofbroilingandgrilling(Hays, 2013).

2.8.4.2 JapaneseFoodHabit: InJapan,the traditionalmealisservedwithrice,vegetables withfermentedsoybeanpaste*miso*soupandfruitsareofteneatenasa desert. Manydishes areaccompanied with soysourceorwasabi (veryhot mustard likegreen horseracedish).

- Atypicalbreakfastismadeupofrice,*miso*soup,spinach,andegganditisgenerally eaten between 7.00a.m.and 7.30 a.m. Italsoincludes juice, coffee,eggsand toast of ricecommonlyreferred to as*asa – gohan.*
- Lunchknownas*lura–gohan*iseatenbetween12.00noonand2.00p.m. Itis generallymadeup ofquickmeals orsnack such as abowl ofnoodles, rice, sandwiches, riceballs orChinesefood.
- Dinner(*Ban–gohan*)iseatenbetween6.00p.m.and8.00p.m. Generally,dinner isaninformalmealwithmeatorfish,riceand*miso*soup.Itisusuallymadeathome anditincludes:curry rice,porkcutlets,meatloaf–likehamburgers,friedfish,stir friedchickenorporkdishes. Drinkssuchasbeer,wine,hottea,cold tea,wateror otherdrinksareservedwiththemeals.Oneservedfoundthat60%ofJapanesevalue eatingtogether asafamily.

2.8.4.2.1 *Changing FoodHabits inJapan:*

Inrecenttime,many JapanesehaveadoptedtheAmericanwayofeatingabigbreakfast, lightlunch,andabig dinner. Thisfattierdiet hasbeenattributedtoanincreaseinheart diseasesamong Japaneseandanincreaseinobesity.Althoughfish,vegetables,andrice remainthestaplefoodinJapan,the Japaneseareincreasingly eatingsweeter,fatty and calorie–richfoodasreflectedby thepopularityof*HaagenDaz*icecream,crispy karma, doughnuts, and four-patty*Maganac*burgers.

Consumptionofriceandfreshfruitshasreducedbyhalfsince1970whilemeatconsumption hasrisenby40%and coffeedrinkinghastripledinthesameperiodoftime. Fish consumptiondecreasedby15%inthe 1990sandthepercentageofpreparedfoodsincreasedby 65%in thesame period(Hay, 2013).

Busy childrenattendingafterschoolclassesarereportedly eatingmoreandmorestarch food,frozenmicrowavesnacks,convenience store sandwiches,a cupofnoodlesandrice balls.Manysalarymen eatalmostexclusivelyat conveniencestores, shops,thatsellcrisps and Belgiumwafflesare a common sight at shoppingareas.

2.8.4.2.2 More Japanese showing TraditionalDiet:

A studyof Tokyo Gas Company'sUrbanLifeResearchInstitute,revealsthattheJapanesearegradually moving awayfromtraditionalfoodandtablemanners.Thestudywasconductedonsurveysonfood habitsonabout3,300respondentsintheir20sto'80sintheTokyometropolitanareafrom 1990 – 2011. Theresultshowed that in 2011,65%of respondents wantedto eat*miso*soup at leastonceaday,downto 77%in1990.Inthe2011survey,lessthan50%ofrespondentsin their20ssaidso.Askedwhetherthey mainly atericeorbreadforbreakfast,34%saidrice inthe2011survey,comparedto44%in1990.Thepercentageofrespondentwhoatebread forbreakfast roseto 40%in 2011, compared to 35%in 1990 (Yomiuri Shimbun, 2012).

2.8.4.3

FoodCultureinIreland: Therearemanyreferencestofoodanddrinkinearlyirish literature, but honeyseems to bewidelyeatenand used in thepreparationof meals. Potato appearedtohavebeenintroducedintoIrelandinthesecondhalfofthe16thcentury,initially asagardencropbuteventually becamethemainfoodfieldcropofallthetenantand labouringclasses. Asafoodsource,thepotatoisagoodsourceofenergy andalsoagood

sourceofmanyvitaminsandminerals,especiallyvitaminC(whenfresh). Therefore, between the 18th – 19th centuries, anIrish diet ofpotatoes and buttermilk wasverypopular.

2.8.4.3.1 FoodinIrelandtoday*:* Prevalenceofchanging the culture inthe20thcentury and the usual modern selection offoods common to Western cultures havebeen adopted in Ireland. Boththe United StateofAmerica fastfoodculture andcontinentalEuropeandishes haveinfluencedthecountry,along withotherworlddishesintroducedinasimilarfashion totherestoftheWesternworld. Commonmealsincludepizza,curry,Chinesefood,and lately,some West Africandisheshave beenmakingan appearance,supermarketshelvesnow contain ingredientsforamong others,traditional, European,American(Mexican, Tex-Mex),Indian,PolishandChinesedishes.Therefore,theproliferationoffastfoodhasledto increasing public healthproblemsincludingobesity,andoneofthehighestratesofheart diseases in theworld (CultureofIreland, 2009).

IntheNorth,theUlsterfry hasbeenparticularly citedasbeingamajorsourceforahigher incidenceofcardiac problems,quotedasbeinga“heartattackonaplate”. Allthe ingredientsarefried,althoughmorerecentlythetrendistogrillasmanyoftheingredients aspossible. However,inrecentdevelopmentinthelastquarterofthecenturyusheredina newIrishcuisine basedontraditionalingredientshandledinnewways. Thiscuisine is basedonfreshvegetables,fish,especially salmonandtrout,oystersandothershellfish, traditionalsodabread,handmadecheeses,andpotato.Traditionaldishes,suchasIrishstew, Dublin coddle, theIrishbreakfast,and potato bread havebeen re-awakened.

2.8.4.4 MexicanFoodCulture

AblendingofthefoodhabitsoftheSpanishshelterandnativeIndiantribesformedthebasis forthepresentfoodpatternsofthepeopleofMexicanheritagewholiveintheUnitedStat

es (chieflyintheSouthWest).Threemainfoodsarefundamentaltotheirpattern–driedbeans, chilipeppers,andcorns.Variationandadditionmaybefoundindifferentlocalities.Among thoseofthedifferentincomelevel,foodgroupsincludelittlemilkfor babies,littlemeat (becauseofcost),occasionaleggs,vegetables,fruits,bread,andcerealsarealsoeaten.A large amountof coffee is used,*Chili*pepper, onion andgarlic areused most frequentlyand other herbs occasionally(Williams, 1973).

2.8.4.5 Cultural FoodHabits inMadagascar

Food Habits: RiceisthestapleoftheMalagasydiet. Itisusuallyaccompaniedbysome formof*kabaka*(a proteindishsuchasfish,meat,chickenorbeans)insomepartsofthe islanddish*romazava*madeofgreenleafy vegetablesinbrothiscommon.Generally,side dishesservetoaddflavourtothericeratherthan providenutrients.MostMalagasyentrees are preparedinoneof fourways,fried,grilled,boiledinwater,orcookedwithcoconut juice. Aspicycondimentknownas*Lasary*inMalagasyandmadeof*chilli*peppers,green mangos,orlemonscanbeaddedtoenhanceflavour. Mealsare servedinthehouse,onthe veranda,oronmatsplacedonthegroundoutsidethehouse.Lunchanddinnerleftoversare warmedforbreakfastthefollowing morning. Breakfastconsistsofriceandateamadeof local herbs or leavesandsweetenedwith sugar. Some other breakfast foods includeboiled manioc, maize, porridge,or friedcakesmadeofriceflavor. Water istheusualbeverage servedwithmeals.*Ranoempago*(waterboiledinthericecookingpot)issometimesserved.

Vegetablesuchas carrots,cauliflower,cabbage, peppers, tomatoes,and zucchiniare availableyear round. Fruitssuchaspineapples,coconut,oranges,mangoes,bananas,and apples aresubject to seasonal availability. Althoughawidevarietyof foods are available, asignificantportionofthepopulationremainsundernourishedbecausethey aregenerally unaffordable on a regularbasis(Madagascar,2013).

2.8.4.6 African FoodHabit

Socialfactorsandculturalpracticeinmostcountriesoftheworldhaveaverygreatinflue nce onwhatpeopleeat,howthey preparefood,ontheirfeeding practicesandthefoodsthey prefer.Therefore,whatAfricancommunitieseatcanbeviewedinthecontextofdiverse socio-culturalandeconomicenvironments.Thefoodconsumedisnotthesamethroughout the whole continent, buttherearesimilarities. However, Africans generallyeat more grain foods but mostof them consumeless than oneservingof fruits perday(Oniango, 2003).

Themain staples inAfrican foodinclude roots and tubers, bananasand cereals,grainsand legumes. ThemainlegumesareBambara nuts,cowpeas,Chesterbeans,hyacinthbeans, mungbeans,Limabeans,groundnuts,pigeonpeas,andsoy beans. Grainformthebulkof foodconsumedinAfrica,andthey areimportantinthedietbecausethey providecomplex carbohydrates,starch,vitamin,minerals,dietary fibre,andphotochemicalcompounds. Theseare oftencomplementedwithlegumesorfoodfroman animalsource thatisrichin proteinandfatand oil. Otheringredientsthatareused toprepareAfrican soupsand accomplishmentaregottenfromvegetableslikebeans,lentilsorgroundnutwithgreenl eafy vegetables (Karen *et al.*,2001).

SnackscommonlyeateninAfricaincludeboiledorroastedrootsandtubers(yam,potato es, cassava,etc.)plantains,boiledorroastedgreenmaize,roastedgroundnutoroilseeds,fri ed fish,insectssuchaslocustor termitesandfruitssuchasbananas,oranges,mangoes, sugarcane, etc.(Kravchenko, 2008).

2.8.4.7 NigerianFoodHabits

Themain factors that have affected the eatinghabits and patterns ofpeople in Nigeriahave beenidentifiedbyEne-Obong(2001)asculture,climate,andeconomicfactors. Food

consumptionofthepeopleisclosely relatedtothetypeoffoodsgrownorproducedin differentpartsof the country. IntraditionalNigeria society,farmfamiliescultivatestarch roots,tuber,cereals,legumes,fruits,andvegetables.Thefoodsmadeupoffamily food basketwereoccasionally supplementedby wildanddomesticatedanimals,whilelegumes, cereals,wildherbs,fruits,andvegetablesmakesignificantcontributionsto nutrientintakes of thepopulation (Ikeda,undated).

According toJosphine(2012),culture,climate,andeconomy arethemainfactorsthathave affectedtheeatingandpatternsofpeopleinNigeria.Basically,Nigeriacanbedividedint o two main regions. Thetwo regions arethe Northand Southern Nigeria. TheSouthernpartofNigeriastretchesinlandfromthecoastintoawidebeltofthe tropicalrain forestandcoversapproximately onequarterofthetotallandmassofNigeriaandinhabits about a third ofthe totalpopulation.

2.8.4.7.1DietaryPatterninthe South: The basiccarbohydratefoodistapioca, supplementedwithyamsor maize,andflour,redpalmoil,andpeppersare addedtoalmost every meal,greenleaves,andfishrealsoused.Availablefruitsincludeoranges, grapefruit,pawpaw,andmangoes,butmany peoplewillnoteatthembecausethey are associated withfeministandintestinalworms. Source of proteinaregoatmeat,cow meat,fish,prawn,chicken,andbushmeat.Othersarepeas,nuts,andbeans. Fadupin(2012) inastudyonSocialsupport,environmentalconditionandnutritionalstatusoftheelderly in Ibadan(South)reportedthatthemainsourcesoftheirenergyandproteinintakewere from roots and tubers, cerealsand legumes respectively. Animal protein, fruits,and vegetable werenot taken regularlyby66.0%, 77.0% and 64.0%of therespondents respectively.

2.8.4.7.2 ***DietaryPatternoftheMiddleClass:*** Themiddleclassgroupiscomposed ofclerks,schoolteachers,andsomebigtradersintheSouthernpartofNigeria.Eventhou gh

EuropeanfoodshavenottotallyreplacedtheNigeriantraditionalfoodscompletely,so me of them areused as supplements among educatedNigerians.

2.8.4.7.3The Savannah GrasslandoftheNorth: TheNorthernpart occupiesabouttwo thirdsofNigerialandmassandthepeopleareMostlyMuslimsandHausabythe tribe.Common staplefoodseateninthisareaincludemeat,milk,wheatproduct,rice,andmillet. The Hausaswhoare thebulkofthepopulationeatmilletinvariousforms. Groundnutoiland palmoilareused in cooking. The eatingpattern issuch that the head of thehousehold eats first,followedby hissons,andfollowedby hiswivesanddaughters. Theamountofmeat andmilkeatenbyothermembersofthefamilyis usuallylessthanthateatenbytheheadof the household.

2.8.4.7.4 MealPatterns ofUrbanDwellers in SouthernNigeria: Inmosthouseholds, twomealsadaywerenormallyeaten,andeachconsistedofalargeservingofcarbohydrat e foodgarnishedwithlittlestewmade withsmallpeppersgreenleaves,palmoil,onion,and other vegetablesanda smallamountof meat. Garriisthe commoncarbohydrate food, with brown rice,yam and corn meal.

2.9 Nutritional advantages oftraditional foods

Thetraditionaldietofmostsocietiesindevelopingcountriesaregood,butonly require minorchangestoenablethemto satisfythenutrientsrequirementofallmembersofthefamily. Thequantity offoodeaten,however,isamorecommonproblemthanquality.For example, toeatcertain protein-rich food such asinsects,snails,baboons,dogs, cats,and someseafoodssuchasfishandlobsterare beneficial(Brown,2008).Anotherhabitthatis nutritionally goodistheconsumptionofanimalblood.SomeAfricantribespuncturethe veinofacow, drawoutsomequantity ofblood,stopthebleeding,andconsumetheblood aftermixingitwithmilk.

Bloodisrichfoodandmixingitwithmilkishighly nutritious. Drinkingofsouredorcurdledmilkisanotherpracticefoundamongotherpeople. Itissafer todrinkmilksourthanfresh,especially incommunitieswheremilkingcannotbe hygienicallyproduced(Oniang'o*et al.*, 2003).

InsomecountriessuchasNigeria,Indonesiaandotherpartsof Africa,somefoodsarepartly fermentedbeforeconsumption.Nutritionally,thequalitiesoffermentedfoodsareimproved and contaminatingbacterial arealso reduced (PAND, 2012).

The traditionaluse ofcertaindarkgreenleavesshouldalsobe encouraged,because,green leavesare rich in iron, calcium, ascorbicacid,andcarotene, andcontaina certain quantityof protein.Somedark greenleavessuch asamaranthus,pumpkin,sweetpotatoesandcassava leavesarerichinvitaminsthan cabbage andlettuce whicharevegetablesof European origin. Inaddition,many fruitsarevery richinvitaminCandthetraditionalgrain preparationmethodproduce a more nutritiousproductthan thosewithelaborate machine milling(PAND, 2012).

Manyindigenous crops,includingwildplantsand animalspecies availablein mostAfrican countries,offerhealth benefitsinadditiontoproviding essentialnutrients.Severalother investigationshave associatedtraditionalAfricanitemswithhealthbenefits,including variousgreenleafy vegetables,grainlegumes,palmfruits,andmillets. Thesefooditems wereidentifiedashealthy bysomeoftheintervieweesatthe InternationalConferenceon Nutrition (ICN) (Raschke*et al*., 2007).

2.10 Changing foodhabits

Overthepastdecades,emerging scientificevidenceabouthealthandnutritionhasresulted inchangingfoodconsumptionpatternintheUnitedStatesofAmericaandaroundtheworld. Pastsurveysrevealedthatatleasthalf ofallconsumersreportedlymadeamajorchangein theirdiets,withnutritionbeingsecondonlytotasteinimportancetoshoppers(Brown,

2008). Thechangingfood habits arerelated to increased awareness that dietcan be associatedwithsomeof the leadingcausesof death-heartdisease,cancer,anddiabetes,as wellas to other commonhealth conditions such asosteoporosis, diverticulitis,and obesity. Thesocialworldaffectstheprocessofphysicalandmentalageingindirectly throughits effectonhealthanddirectlythroughphysicalstressontheorganism.Many peopleassume thatillhealthisbroughtonby ageing,althoughitistruethatoldageincreasesone`s vulnerabilitytotheageingprocess(Stark,1995).Ageingdoesfinallytakeitstoll,butitdoes nottake itstollatthe same chronological ageforallpeople.Some peopleseemoldatage fifty,whereas,othersdonotbegintolookoractolduntiltheyareintheirlateseventies. Adultswithadequate incomescanafford an adequate diet,goodhealthservices,befitting housingas wellas recreation and transportation (Stark, 1995).

Oniang'o *etal*.,(2003)observed thatmanyAfrican countries havein thepast three generationsexperiencedextensivechangesinfoodsupplyandinthe householddiet. Inmany partsoftheworld,staplefoodsarechangingandwillcontinuetochange.Maize,cassava, andpotatoesare nowgrowninlargeamountinAfrica,whichoriginated outside the continent sincemoreof thesefoods werenoteaten in Africamanyhundredyears ago; itis evident that the food habitof millions of people has changed. Theimplication, therefore,is thatmany Africanshaveabandonedyamsandmilletformaizeandcassava,justasmany Europeansabandoned barley,oats,andryeforwheatandpotatoes(Oniango*etal*., 2003). Today,exotic(untraditional) foods nowdominatemanyurbanareas in Africa. Even in the ruralareas,therangeoftraditionaldomesticfoodstuffhasbeenconsiderablyreduced,partly due tothe increasedcostofproductionandprocessing,andlaboriousdomestic preparation methods. This has greatlyreduced the contribution of traditional diets to thefamilydiet.

In Nigeria, food consumption pattern has been dynamicover theyears. Someof thefactors contributory

tothechangeincludeculturalandagriculturalpractices,education,improved standard of livingand population movementand urbanization (Ene-Obong, 2001).Today, theoldtraditionalfoodculturalpracticesarenolongermaintained. Ene-Obong(2001) observedthatduring thecolonialdays,thecultivationofcashcropsaffectedagricultural andeatinghabits. Inthe earlyseventies,mattersweremadeworsewith“oilboom”and consequently urbanization. Withtheforeignexchange,revenue,accruinganddevaluation ofthe naira,importationoffoodandotherproductsartificially becamecheaperinrelationto domesticproduction,keeping foodhabitschanging.Theproblemnowliesinguidingand fostering desirablechange and to slow down undesirable ones.

2.11 Effect ofchangingfromtraditional foodtowesternizedfood

OneofthedifficultiesfacingtheAfricansoftodayisthenutritionalshiftfromtraditional foodhabitstoprocessedandpackagedfoodproductsofWestern–ownedCorporations.The consumptionofthesenewfoodproductshasresultedintothe increasedintakeoftrans-fatty acids,preservatives,andsaturatedfat;andreducedintakeofdietaryfibre,vitalnutrients and photochemical whencompared to the basicdietaryguideline (Raschke*et al.*, 2007).

UrbanizationhasgreatlyinfluencedAfricanfeedinghabits.Inurbanareas,foodhabits consistofhighconsumptionofprocessedfoodandsnacksthatmaybepreparedand marketedunderunhygienicconditionsleadingtofoodcontamination.Many‘urbanites’ havetakenupuntraditionalfoodaspartoftheirdailydiet(Oniang’o*etal.*,2003).

Majority ofthesefoodsaresnacks,whichareconsumedasmealsduringlunchorsupper. Changes inlifestylesandeating habitshaveledtoademandformore‘snack’foods;consequently, snackinghasbecomea regular feeding habit.Snackfoodshavebeenfoundtohaveahigh proportion of fat, starch,and high sugarcontent. The shiftfromtraditionalindigenousfoodtoWesternizedfoodculture hasbeentermed “nutritiontransition”andhasbeendirectly implicatedintheriseoftype2diabetes, Cardiovascular

Diseases(CVDs),hypertension,obesity,cancer andrelatedNon- Communicable Diseases(NCDs)throughout Africa(Reschke*et al.*, 2007).

Inessence,itcouldbesaidthatnon-communicablechronicdiseases havesimplycomenot only toreplaceinfectionsandmalnutrition-relateddiseasesinAfricabutalsotoinflicton thevulnerablepopulationsapolarizedandprotracteddoubleburden ofdiseases,where the effectofthenutritiontransitionareadditivetotheexistinginfectionburden(Leonnie,2005). Someofthemajorfactorscontributingtodoubleepidemicasnotedby thecohort (respondents)inthestudyon"TheNeedforanonlinecollectionofTraditionalAfricanFood Habits",include:urbanization,associatedeconomicpressureandmal-distributionofwealth 33%,adoptionofwesternculturalbeliefs17%,adoptionofanunhealthy monotonousdiet includingexcessiveenergyconsumptioninurbanareaandunder-nutritioninruralareas 16%severalintervieweesidentifiedlackofavailableinfrastructure14%, including lackof basichealthcare,lossofarableland,lossofbiodiversityandreducedaccesstoqualityfoods asthemajorcausesofthedoubleburden. Existingdiseaseburden 7% andlackof knowledgeofwhatisconsideredas'healthy diet'7%werealsoidentifiedasinfluential factors (Raschke*et al.*, 2007).

In North Asia, astudyonthe nutrition knowledge,beliefs,and dietaryhabits amongelderly peopleinNizwa,Oman,revealedthattheelderlyinthestudy lackedknowledgeaboutthe benefitsofnutritiousfoodsandmajorityofmenandwomenbelievedthattherewasnoneed tochangethequantityandquality ofnutritionwithincreasingage.Poorconsumptionof vegetables was revealed.Thereisample availabilityoffoodstufffromdifferentpartsoftheworldinOman.Amajorityoftheelderlyinthisstudylivedwiththeirfamily. Findingsalso showedthatnearly45%ofelderlypeopleinNizwawereoverweightorobese,andhadpoor knowledgeofnutrition, alongwithnutritional

imbalancesandlowlevelsofphysical activity.Significantsex differences existedinelderlypeoples'nutritionalknowledge consumptionoffluids,milkandsweets,useofdietary requirementandexperienceof appetite change(Al Riyami, 2010).

Lessonsfromstudies inmiddle-agedandolderadultsliving in MediterraneanIslands, AthensandGreeceontheroleofdietary habitsandnutritionservicesrevealedthathigh adherencetoaMediterraneantypeofdietora"healthydietary"patternwasassociatedwi th reducedriskof cardiovascular disease inmiddle-agedandevenintheolder peopleof the Mediterraneanislands.Mediterraneanislandsarechanging thetraditionalMediterranean diettowardsamorewesterndietarypattern.However,theelderly peoplelivinginthese insulareasseemtobetterholdthetraditionalhealthydietaryhabitsthantheyoungeron es. Thebeneficialeffectsonbloodpressureandlipidslevels,body fat,andothersurrogate markersofCVDriskaddbiologicalplausibilitytotheepidemiologicevidencethatsupp orts aprotectiveeffect of theMediterranean diet (Stefano*et al*., 2010).

2.12 Foodcultureanddevelopment

Culturaltraditionsregarding foodareflexibleandkeepevolvingas peoplemoveandlearn aboutnewfoods andcultures(SizerandWhitney, 2000).Food habitsareslowanddifficult tochangebecausefoodhasan importantpsychologicalassociationwiththefamily andthe community.Familiarfoodissatisfyingandreassuringparticularly thetraditionalfoodsof childhood which evokeadeep seated emotional response (Oniang'o, 2003).Though many peopleareawarethattheirfoodhabitsaffecttheirhealth,they may choosefoodforother reasons, amongwhich is poverty(Srilaskmi, 2006). Manypeople in the world todaylivein abjectpoverty (WorldBank,2001).TherearehugedifferencesintheGrossDomestic Product(GDP)perpersonbetweencountries,from$68,800inLuxembourg to$600in Malawi(CIA,2007),andinequalitieswithincountriesbetweenthevery richandthevery poor(AlbonandMukherji,2008).Oneoftheconsequencesofpoverty ispoorhealthas measuredby

lifeexpectancy,childhoodmortality,hungerandmalnutrition(Albonand Mukherji, 2008).

InahighlyurbanindustrializedsocietysuchasAmerica,inwhichvalueisplacedonthe action, speedandproductivity,lunchforthebusinessmenmay beaquicksnackwhichheeats whilestandingatalunchcounter(Srilakshmi,2006).Theformofthefoodisgearedtowards quickeating,fruitinjuiceform,andmeatinasandwich,whiletoaSpanishorLatin Americanmerchant,suchaLunchisunthinkable.Hislesstenselyspacedcultureallows him toclosehisshopfortwohoursinthemiddleofthedaywhileheenjoysaleisurelymealand siestaathomewithhisfamily.Foodinthe familyrelationshipiseatentogetherandhelpsthe family groupto build closenessand familysolidarity.Cultural beliefandreligionplayalargerole in the eatingpatterns anddiet ofmillions of people aroundtheworld (Lisa,2002).

2.13 Types andproblems ofmalnutrition

Malnutritionisamajorprobleminbothdevelopedanddevelopingcountriesamongallages (FAOandWHO1992).Deficienciesinsomenutrientshavebeenreportedtocausediseases whichcouldleadtoimpairedcognitivedevelopment(SimeonandMc Gregor, 1989). Malnutritioncanberegardedasanabnormalintakeofnutrientsleadingtoalterednutritional statusasmanifestedinover-nutrition;overnutritionleads,tochronic diseasessuchas obesity andheartdiseases,whileunder-nutrition,leadstodiseasessuchasmarasmus, beriberi,andscurvy (Lisa,2002).Itisadeviationfromthe requiredamountsofoneormore nutrients needed forgood health.

Malnutritioncanalsobedefinedasapathologicalstateresulting fromrelativeorabsolute deficiency orexcessofoneormoreessentialnutrients(Srilakshim,2006).Thiscomprises fourforms viz:

- Undernutrition:aconditionwhichresultswheninsufficientfoodiseatenovera n extended period oftime.
- Overnutrition:apathologicalstateresultingfromtheconsumptionofexcessive quantityof food over anextended period oftime.
- Imbalance: a pathological state resulting from disproportion among essential nutrients withoutthe absolute deficiencyof anynutrient.
- Specificdeficiency: apathological stateresultingfromarelativeor absolutelackof an individual nutrient(Srilakshim, 2006).

2.14 Malnutritionamong adults

Numerousfactorsmaycontributetodevelopingmalnutritioninanadult.Thereducedba sal energyrequirementcausedbylossesinfunctioningprotoplasm andreducedphysical activitycombinetocreatelessdemandfor caloriesinadvancing age(Williams,1973). As anadultgrowsolderfromageof30years,hismetabolicratedecreasesby2%ayear,but veryfewadultsreducetheirfoodintaketobalanceitwiththeirreducedenergyoutput(Lis a, 2002). This leads to an energyimbalance and astate ofoverweight or obesity.

Deficiency diseasestaketheirmainforminmalnutrition,themoresevereformsofwhich pertaining to matured-adults includehypertension, diabetes, heart disease, obesity,etc (AlbonandMukherji,2008).Poordietary habitsinyoungadulthood,as wellasanother personal habit, tend to beset and accentuated in old age. Although surveysshow adequate totalcalorie intakesontheaverage,there isfrequentevidence of inadequatedistributionof theircalories infoodchoices.Forexample, theremaybefeweranimal proteins, meat,egg, milk; more useofgrainsandother starchinbreadandcereals,fewervegetablesandfruits, and moresweets and desserts (Williams, 1973).

Adebusoye*etal.*,(2012)conductedastudy inIbadan,ontheNutritionalStatusofOlder PersonsPresentinaPrimary CareClinicinNigeria,theresultfindingrevealedthatthe prevalence ofnutritional problemswas 61.9% (undernutrition was 7.8% and overweightwas 54.1%). Beingunmarried(P<0.001), engagement inajobaftertheageof 60years(P< 0.001), constipation(P< 0.009) rectalbleeding(P<

0.008), andoralproblems (mouth,teeth,andtongue)weresignificantly (P<0.001)associatedwithundernutrition. Younger age(P<0.050)andfemalegender(P<0.011)weresignificantly associatedwith being overweight,logisticregressionanalysisshowedbeing unmarried OR=1,355(95% CI 1,075–1,708)tobethemostimportantfactorforthedevelopmentofundernutrition. Thehighprevalenceofnutritionalproblemsinthisstudy underscorestheneedfor interventioninthis population. Correlation analysis(Pearson's)showedapassive association between BodyMassIndex(BMI)andMNAscores(r=0.152 P=0.001)

2.15 Roleofnutritioninhealth anddisease

Nutrition is definedas the artand scienceofhowan organismis nourishedfrom thedayof conceptiontotheday ofterminationby death.Nutritiondealswiththeintake,digestion, assimilationandultimate utilizationofthevariousnutrientsinfoods.Foodisabiological materialcapableofnurturingthebody (Olowookere,2003).Humanbeingseattosurvive. Theyalsoeattoexpressappreciations,senseofbelongingaspartoffamilycustoms,andf or self-realization.People eataccording tolearned behaviorsregardingetiquette,mealand snackpatterns,acceptable foods, food combinations,andportionsizes(Albonand Mukherji,2008).Food habitsthatare mostlyclosely associatedwithfamily sentimentsare themosttenaciousthroughoutlife.Longintochildhood,certainfoodsarevaluedforreas ons totallyapart from anynutritional value. Goodnutritionimpliesthepresenceofadietthatcontainsallthenutrientsthatarenecessa ry fortheproperfunctioningofthebody.The nutrientrequirementistheminimumamountofthe absorbednutrientthatisnecessary formaintainingthenormalphysiologicalfunctionsof the body(Srilakshim, 2006).

Nutritionhasplayedasignificantroleinthelifeofevery individualanditwillcontinueto affecttheindividualinmajorways,dependingontheirfoodselectionandchoices(Whit ney and Rolfes, 2008). Many years ago,meat,milk, grains, nuts, vegetables,andfruits were the only foodavailableforconsumption.Todayfoodcompaniesofferthousandsofprepared andpackagedfoods,many ofwhicharea mixtureofthosebasicfoodswiththe

inclusionof artificialingredientstherebymakingmanyvarietiesoffoodstobeavailable.Theavailability ofteseprocessedvarietiesmakesfoodchoicesdifficultratherthanbeingeasy tomakea reasonablechoiceorplananutritiousdiet(Amy 2008).Everyday'schoiceoffood influencesthebody'shealthforbetterorworse,asthechoicemaybenefitorharmthebody's health. Whenchoicesare repeated over theyearsanddecades,the consequencesbecome major(Albon and Mukherji, 2008).

Whereawidevarietyoffoods areavailable,people's foodchoices are influencedbymany factors,andthemostinfluencingofthesefactorsisfoodpreference.Foodpreferencevaries agreatdealamong peopleandleadstoawiderangeofspecificfoodchoiceswhichare primarily learnedrather thaninborn(Srilakshmi,2008).However,carelessnessaboutfood choicescancontribute toa lotofchronic diseasesthatarecommoninlaterlife (Sizerand Whitney, 2000).

2.16 Changes innutrient needs with age

Health, physiologic, andfunctionalchangesthatoccurwith ageing affectnutrientneeds. Knowledgeofthenutrientrequirementsofmid-adultsandmaturedadultsisgrowing, yetin someinstances,thesituationsarenotadequately investigatedtoestablisha standard. Therefore,itisworthy toknowthatpeopleofallagesneedmorethan40nutrientstostay healthy.Withage,itbecomesmoreimportantthatdietcontainsenoughcalcium,fibre,iron, protein and thevitamins A, C, D, folacin,reducedcalories, select nutrient densefoods, and enjoysmallerportionoffoodsnothighinfatsugar andsodium,becausenoonefoodorpill providesallof thenutrients. Hence,varietiesoffoodshouldbe eateninorder toderiveall the nutrientsrequired bythe body.

2.17 Nutritional role inhealthy adulthood

Althoughhealthstatushasmultiplecontributory factors,nutritionisoneofthemajor determinantsofsuccessfuladulthood.Foodisnotonlycriticaltoone'sphysiologicalwe

ll- beingbutalsocontributestothe social,cultural,andpsychologicalquality oflife(Positionof AcademyofNutrition and Dietetic (PAND), 2012). Primarily,nutritionhelpspromotehealthandfunctionality.Asasecondary andtertiary strategy,MedicalNutritionTherapy (MNT)isaneffectivediseasemanagementapproach thatlessenschronicdiseaserisk,slowsdiseaseprogression,andreducesdiseasesymptoms. Thus,theyearsattheendof thelifecyclecanbe healthful,enjoyable,andproductive if chronicdiseases and condition can beprevented or effectivelymanaged (PAND, 2012).

Healthy lifestyles,earlydetectionofdiseases,immunizations,andinjurypreventionhave proventobeeffectiveinpromotingthehealthandlongevity ofolder-adults. Oneinevery eightpeopleinAmericaisanolder-adult,definedbytheOlderAmericansAct(OAA)asan individual who is aged 60yearsand older (MaijaKatarina*et al.*, 2008). Theenjoymentoffoodandnutritionalwell-beingalong withotherenvironmental influenceshavean impactonhealth-relatedqualityoflife andtheageing process. Qualityof lifeisdefinedinPublic HealthandMedicineasapersonperceivedphysicalandmental healthover time, includingfactorssuchashealthrisksandconditions, functionalstatus, social support, and socioeconomicstatus (Mattithias, 2001).

Approximatelyonethirdofolder-adultsareageingsuccessfullybasedonobjectivecriteria; however,agreatnumberofolder-adultsperceivethemselvesbeingasageing successfully despitethepresenceofillnessanddisabilityofthemostcommoncausesofdeathofadults aged65yearsandolder intheUnited States,five ofeighthave aknownnutritional influence. Almost80%of old--adultshave onechronic condition,andhalfofallolder-adults havetwo ormore. Morethan 39%of allnon-institutionalized persons aged 65years andolderareinexcellenthealthandonly6.4%oftheseadultsneedhelpwiththeirpersonal daily care (Bengmark, 2006). Preventing

chronicdiseasesandreducingassociated complicationsisanessentialstrategy forkeepingall-adultshealthy andindependentin a communitydwelling.

2.18 Nutritional requirement forhealthy ageing

Nutritionisanimportantfactor contributingtothe healthandfunctionalability, andtheimpact ofthenutritionalstateonphysicalandpsychologicalwell-being ishighinmid-adultsand maturedadultsandespeciallyhigherintheelderly. Moreover,matured-adultsandthe elderly aremorelikely thanyoungeradultstobeinthe impairednutritionalstateandtobeat higherrisk,orhighnutritionaldeficiency intimeofhealthcareproblems(Mattithias*etal.*, 2001). Asaresult,nutritionisregardedasapromisingapproachtomodulating theriskof ageing- relateddiseasesby theeffectofcertainnutrientsongeneexpression. Oneofthemost practicalapplicationsofnutritionalmodulationofchronic diseasesassociatedwithageing asidentifiedby Kornman(2006)isthenutrientsthatregulatetheexpressionof inflammatorygenes. Theanti-inflammatorymoleculessuchaspolyphenolsmay be effectivein delayingageingrelated diseases (Bengmark, 2006).

Recentstudieshaveshownapositiveeffectofdietary sourcesthatstimulateBone Morphonic Protein(BMP) promoter,whichstimulates bone formationandthusimproves bonemassintheelderly withosteoporosis. FlavonoidsandStatinsoccurnaturallyinfood products and can promote boneformation (Kravchenko, 2008). Thenutritionalrequirementsinmacro-andmicro-nutrientsinthematured-adultsdifferfrom young adultsandmid-adultsbecauseof ageing-associatedeffectsofnutrientsingestion, absorption,andmetabolism. Ageingrelateddiseases,theeffectsofageing onnutrients, drug-nutrientinteractions,andsocialproblemsshouldbetakenintoaccountwhenanalysing thenutritionalstatusofolderpersons(Mattithias*etal.,*2001),aged60andabove(WHO, 2003).

Assessmentofdietary patternsfromthe participantsinthehealth,ageingandbody composition studyfound that in old-adults, a diet consistent with current guidelines, including relativelyhighamountofvegetables,fruits,wholegrains,poultry,fish,andlow-fatdairy productsmay beassociatedwithsuperiornutritionalstatus,quality oflife,and survival (Lisa, 2006).

Inthis‘nutritiontransition’age,thereshouldbeadequatenutritionforhealthy ageingand properfunctionalabilitytopreserveaminimumquality oflife. Itbecomesobligatory to plan to meet the challenges of thefutureincreaseof matured-adults and the elderly.

2.19 Changing foodcultureandnutritional status

Cultureis transmitted from onegeneration to another byinstitutionssuch as family, schoo,andchurch(Encyclopedia AmericanaInternational,1989).Overa periodof time, various degreesofchangeoccurwithinanygivenculture.Changestakeplacewithinandamongt he cultures by meansofecologicalandenvironmentalchangesby diffusionofadvantageous culturaltraitsamongsocietiesatapproximately equivalentstageofculturaldevelopment, byaccumulationoracquisitionofaforeign culture,byrelativelysubjectpollutionorbythe evolutionofcultureelementoveraperiodoftime(TheNewEncyclopediaBritannica, 2007).

Amongthemany effectsofrapidsocio-culturalchangewithuprootinganddisplacingof personsandfamiliesarechanginginthefoodhabitsofmillionsofpeople. Theabject poverty ofsomeworkersandtheincreasedaffluenceofothershaveresultedfrom Industrializationandchanging urbansub-urbanliving pattern(Williams,1973).These newly emergingpatternshavecontributedtochangesinfamilypatternsandvalues,hence, thereinforcementofthegroupunityandstabilitythatwasformerlyfeltfromeatingtoget her islost.Therefore,childrenwhoare lefttofendforthemselvesdeveloperraticeating habits

andtendtofilltheirstomachswithadietthatisnutritionallyinadequatewhichleadtopoor food choicesand pooreatinghabits.

2.20 Thegrowing ageing population

Thedemographics oftheageingU.S.population ischangingandgrowingdramatically as baby boomersreachanolderage. Since1900,thepercentageofAmericansaged65years andmaturedadultshasmore than tripled;from4.1% to13.1%of thepopulationin2010. Thenumberof olderAmericansreached 40.4million persons in 2010. By2030, therewill beabout72.1millionolderpersonrepresenting19.3%ofthepopulationinalmosttwicet he numbertherewasin2007. The85yearsandolderpopulationareexpectedtoincreaseto 6.6 million in 2020 (PAND, 2012).

Nigeria,like other countriesinAfrica witha similarsocio-economic condition,is notan exception to thepoorhealth of thematured andelderlypeople. Despitethis poor situation, thestatisticalprojectioninNigeria between1990andtheyear2025showedanincreasein thenumberofelderly people. By 2025therewillbeanincreaseofover80%withmore womenataratioof1to1.2.Furthermore,itwasclearfromtheprogressionthattheelderly population in Nigeriawould be doubled by2015(Mattithias, 2001). The observationof nutritionalassessmentsinAfrica revealed thatsomeolder people in developingcountriesenteroldageafteralifetimeofpoverty anddeprivation,adietthatis inadequateinquality andquantity andalifetimeofdiseaseandpoor accesstohealthcare (Raschke*etal.*,2007).

Therefore,people'sdemographiccharacteristics,suchassocio- economic condition,adequate andappropriate nutrition,accesstobasicsocialamenities suchasfood,water,electricity havebeenfoundtobehighly correlatedtohealthand nutritionstatus.Otherfactorssuchasage,gender,townshipstatus,andethnicity,whicha re fundamentaltodemography,cancontributeinoneformortheothertothequality oflife andnutritionalstatusofthematured-adultsandtheelderly(Steyn*etal.*,2006).Alongwith generaltrendsfor U.Spopulation,theHispanic,American,IndianandAlaskannative,

African,American,AsiaandHawaiianand PacificIslandpopulationsarealsonow living longer.

2.21 Factors responsible forageing

Many factorsare responsibleforthevariationsintherateatwhichan individual'sage. Some ofthefactorsfoundtohaveaninfluenceontheageing processofallpeoplesinclude nutritional,medical,cultural,social,biochemical,economic,psychological,andeducational factors.

2.21.1 Nutrition: Poornutritionisagreatproblemamongoldadult.Low income, poor health,andinadequatetransportationtothemarketsmakeitdifficulttoeatwell(Stark, 1975). Nutrition and health influencelongevity.Itis notonlythe qualityof food consumed butalsothequantitythatcannourishthebodyingoodhealthslowsdowntherateofdiseases in thebodyandconsequentlyslows therate of ageingthat is important (Davison, 1975).

2.21.2 Culture: Ageingisabiologicalprocessthatcanbeinfluencedbysocialfactors including culture andsocialorganizations.Culture,belief,andreligionplay alargerolein the eatingpatternand diet of millions of people around the world (Charles,1992).

2.21.3 Medical: Easy accesstomedicalfacilitiesandcarecouldhelptoelongatethe lifespanofindividuals.Availabilityofmedicalcarecanslowdowntheageingprocess.But whenpeoplefinditdifficulttopay formedicalservicesandcarewhenneeded,other deterioratingfactors willcome in, ageinginclusive(Diane, Aldwin,and Carolyn, 2003).

2.21.4 Social: Many socialreasonsmay beresponsibleforgrowingoldrapidly. For instance,participationinsomeformsofsocialactivitiescanacceleratetheageing process. Themassivewastageofbody energy throughrecklesssocialactivitiessuchasexcessive

smoking,drinkingofalcohol,drugabuse,anduncontrolledsexualactivity may leadto premature ageing. Inanothervein,among ruralcommunitiesin Nigeria,socialand economicproblems may accelerateachild'smaturity asaresultofthecompelling needto assume adult responsibilities. In suchcases, children maybeforcedtogenerateincomeby startingtoworkmuchearlierthantheyaredue. Achildwhostartsworkearly inorderto serveasafinancialpowerofapoorfamilyisthusrushedintomaturityandmaystartweari ng the appearanceofafull adulttoo soon (Denga, 2005).

2.21.5 Economical: Poverty oreconomicdownturniscapableofacceleratingageingas peopleareoverstressingthemselvesunimaginably tomakeendsmeet,-ifapersonhasto operatetwoormorebusinessesafterclosing fromtheprimary/officialworkeachday,the amountofbody batteringorfloggingissuchthatstresswithdistressmightresult. Therefore, arepeatedor protractedincidenceofbodyabuse couldleadto prematureageing in appearance(Harper, 2006). Oneoftheconsequencesofpoverty ispoorhealthasmeasuredby life expectancy, childhoodmortality,hungerandmalnutrition(Charles,1992).Inthemajorityworld,m any familiesstruggle tofind the resourcestofeed children and adultsadequately, and most prevalentformofmalnutritionisduetoinsufficientfoodbeing available(Brown,2008). Hence,many oftheworldproblemstodayareattributedtotheinteractionbetween malnutritionanddiseases(Liam*etal.*,1995).Ithasalsobeenobservedthatfeelingsof anger, hate, irritation, aggression,rejection,melancholia anddejectionbring aboutan emotional overload which is capable ofacceleratingageing(Dengerand Udoli, 2005).

2.22 Antidoteofageing

2.22.1 Psychologicalmethod: Onepsychologicaleffectivewayoffightingthe chronological ageingis to resolve to beyoung at heart. For example,

asixty(60)years old personmay deliberatelyandconsciously decidetotakethingseasy,tochallengetheirfate andtorefuse toliedowninthefaceof serioustrials,temptations,andtribulations. Such peopleshunsadism. They perceivelifeasfullofprospects,possibilities,andpromises. They exhibitanenormoussenseofhumour. They alwayslook neat,cheerfulandhappy (Strawbridge*et al*, 2002).

Anotherpsychologicalbehaviourthatcouldbe usedtoslowdowntherateofageing isto actyoung,evenif youarealready60 yearsold.Adeterminationtocombatageingislargely psychological. Forexample,whena65yearsoldmandyeshishairtoremovegray hair, wearsalightpairofjeans,andatightT-shirttoreally looklikea35yearsoldyouthin regressing. Heknowsthatitisdesirabletolookyoung;hence,thepsychology offeeling youngand behavingyoungcango alongwayin slowingdown therate ofageing.

2.22.2 Physiologicalmethod: Oneoftheimportantanti-ageingremediesisregular moderateexercisesbecausesedentary lifeisaninvitationtoprematureageing. Themore thebody isexercised,thehealthieritbecomes. Physicalexercisesgivepeopleayouthful lookfaroutofproportiontotheirchronologicalage.Itimprovesappetitesforfoodandse x, promotes the efficientcirculationof blood,reducessnoringwhensleepingandreducesbody weight. Exerciseneednotbe rigorousorvigorous,butitneedstoberegular. Therefore, exercisessuchaswalking,jogging,tabletennis,squash,cycling,golf,swimming,etc.sh ould beconsideredfortheregularpracticeof15–20minutesaday two-threetimesperweek (Olowookere, 2003).

2.23 Global assessment of nutritionand development

AglobalassessmentofnutritionanddevelopmentbyFAO/WHO1992,affirmsthatcha nges indietandlifestyleassociatedwithurbanization,highincomeandlongevityhaveledtot he emergence of diet-relatednoncommunicablediseases(obesity,hypertensionandstroke, cardiovascular diseases and diabetes mellitus) as major problem from excessive or

unbalanceddiets,oftencoupledwithunhealthy lifestylessuchasinadequatephysical exercise, stress andabuseof alcoholand tobacco.

Althoughmostpeoplerealizethatfoodhabitsaffecttheirhealth,theyoften choosefoodfor otherreasonsapartfromnutrition. Thesereasonsincludevariety,pleasure,traditions, association,andnourishment,aswellastheability tocombinefavouritefoodswitha nutritionallybalanceddiet(WhitneyandRolfes,2008).Also,manyAfricancountriesh ave inthepastthreegenerationsexperienced extensivechangesin foodsuppliesandhousehold clients.Exotic(untraditional)foodnowdominatesmanyurbanareasinAfrica.Evenint he rural areas the rangeof traditional domesticfoodstuffhas beenconsiderablyreduced partly due totheincreasedcostofproductionandprocessing,andlongandlaboriousdomestic preparation methods (Oniang'o, 2003).

2.24.1 Dietaryguidelineforadulthood

According toWHO,consumingahealthy diet throughout thelife-coursehelpsprevent malnutritioninallitsformsaswellasarangeofnon-communicablediseasesandconditions. Butthe increasedproductionof processedfood, rapidurbanization,andchanginglifestyles hasledtoashiftindietarypatterns.Peoplearenowconsumingmorefoodshighinenergy, fats,freesugarsorsalt/sodium,andmany donoteatenoughfruit,vegetablesanddietary fibresuchaswholegrains.Theexactmake-upofadiversified,balancedandhealthy diet willvary dependingonindividualneeds(e.g.age,gender,lifestyle,degreeofphysical activity),culturalcontext,locallyavailablefoods,anddietarycustoms.Butbasicprinci ples of what constitutesahealthydiet remain the same.

- ForAdults, a healthydiet contains:
- Fruits, vegetables, legumes (e.g. lentils, beans), nuts and whole grains (e.g. unprocessed maize, millet, oats, wheat, brownrice).
- Atleast400g(5portions)offruitsandvegetablesaday(2)Potatoes,sweet potatoes, cassava, and other starchyroots arenot classified as fruits or vegetables.

Lessthan10%oftotalenergyintakefromfreesugars(2,5)whichisequivalentto 50g (oraround12levelteaspoons)forapersonofhealthybodyweightconsuming approximately2000calories per day, but ideallyless than 5%of total energyintake foradditionalhealthbenefits(5).Mostfreesugarsareaddedtofoodsordrinksby themanufacturer,cookorconsumer,andcanalsobefoundinsugarsnaturally present in honey, syrups,fruitjuices and fruitjuiceconcentrates.

- Lessthan30%oftotalenergyintakefromfats(1,2,3).Unsaturatedfats(foundin fish, avocado, nuts, sunflower, canola,and oliveoils) arepreferable to saturated fats (foundinfattymeat,butter,palmandcoconutoil,cream,cheese, ghee,andlard)and *trans*-fatsofallkinds, including bothindustrially produced*trans*-fats(foundin processedfood,fast food, snack food,friedfood,frozen pizza, pies,cookies, biscuits,wafers,margarinesandspreads)andruminant*trans*-fats(foundinmeatand dairy foodsfromruminantanimals,suchascows,sheep,goats,camelsandothers). Itissuggestedtoreducetheintakeofsaturatedfatstolessthan10%oftotalenergy intakeand*trans*-fatstolessthan1%oftotalenergyintake.Inparticular,industrially produced *trans*-fats arenot part of ahealthydiet and should be avoided.

Lessthan5gofsalt(equivalenttoapproximately1teaspoon)perday(6)anduse iodized salt.

CHAPTER THREE
METHODOLOGY

3.1. Study design

This study was descriptive cross-sectional in design, involving adults aged 40 to 80 years and set out to assess the relationship between household socio-demographic and socio- economic characteristics as well as the food habit of adults in Oyo State, and their perceived health-related quality of life. It involved three Local Government Areas, one from each of the three Senatorial Districts in Oyo state.

3.2 Study area

Oyostatewaspurposivelychosenforthestudybecauseofitsdiversityandpopulation.The stateislocatedintheSouthWestgeopoliticalzoneofNigeria;OyoStatewasoneofthe threeStatescarvedoutoftheformerWesternStateofNigeria.Thethirty-three(33)Local GovernmentAreasofthestateisdistributedacrossthree(3)senatorialdistricts.TheState coversapproximatelyanareaof28,454squarekilometersandisranked14thbysizein Nigeria,itisboundedinthesouthby OgunState,inthenorthby KwaraState,inthewest itispartlyboundedbyOgunStateandpartlybytheRepublicofBenin,whilein theEastby OsunState.

Thelandscapeconsistsofoldhardrocksanddome-shapedhills,whichrise gentlyfromabout500metresinthesouthernpartandreachingaheightofabout1,219 metresabovesealevelinthenorthernpart.SomeprincipalriverssuchasOgunRiver,Oba, Oyan, Otin, Ofiki, Sasa,Oni, Erinle and Osun River taketheir sources fromthis highland.

OyoStatepopularlyreferredtoasthe“PaceSetterState”isoneofthe36Statesofthe FederalRepublicofNigeria.ItcameintoexistencewiththebreakupoftheoldWestern StateofNigeriaduringtheStatecreationexercisein1976anditoriginallyincludedOsun

State,whichwassplitoffin1991.OyoStateishomogenous,mainlyinhabitedbythe Yorubaethnicgroup,foundinthesouthwesternNigeriawhoareprimarilyagrarianbut haveapredilectionforlivinginhigh-densityurbancenters.TheYorubaculturewas originallyanoraltradition,andthemajorityofYorubapeoplearenativespeakersofYor uba language.TheYorubaareamongthemosturbanizedpeopleinAfrica. For centuriesbefore thearrivaloftheBritishcolonialadministration,mostYorubaalreadylivedinwell-structured urbancentresorganizedaroundpowerfulcity-statescenteredaroundtheresidenceofthe *Oba* (king).

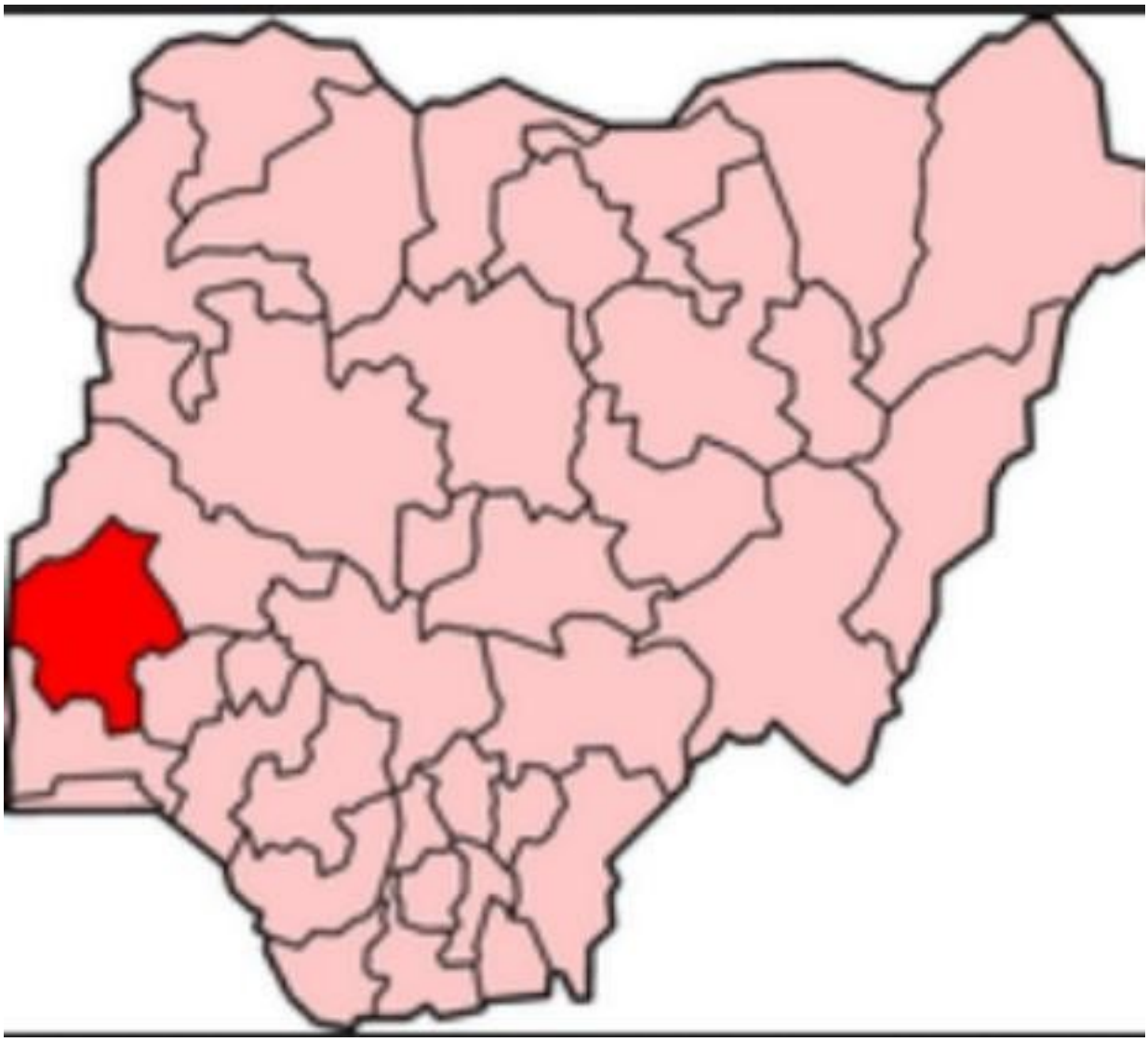

Figure3.1:MapofNigeria showing Oyo State

Figure3.2: MapofOyo Stateshowing the threesenatorial districts

3.2.1 Brief history of Atiba local government

AtibaLocalGovernmentArea came intopracticalexistence on4thDecember 1996.Itwas carvedoutofthedefunctOyoLocalGovernment.Ithasapopulationof169,702basedon the2006censusfigureandcoversalandmassofabout2,197.53km².
itisboundedintheNorth bytheforestreserveandOrelopeLocalGovernment,intheSouthbyOyoEastandOyo West LocalGovernment,intheEastbyOriire Local Governmentand intheWestbytheSakiEast LocalGovernment.Ithasten wards namely:Oke Afin1,OkeAfin2,Aremo,Basorun,
Agunpopo1,Agunpopo2,Agunpopo3,Asipa1,Asipa2,andAsipa3.Themajortowns and villagesinthearea are Agunpopo,Oke-ebo,IsaleOyo,Sabo,Oke Olola,Basorun,Aafin, Asipa, Koso, Sakutu, Agbaluasa, Aremo Oke,Otefon,Ijawaya,Igbonla, Gboburo,Baale, Agba, Arinkinkin, Onire-Bara, Ajiroba,AraOyo,Idi-Ogun and ahost of others.

ThemajoroccupationsofthepeopleofAtiba LocalGovernmentarefarming,trading, transportation,traditionalframeworks,and
generalmerchandise.Thequalityofshelterinthe LocalGovernmentmaybeclassifiedintothreetypes,whichvary directlywithpopulation density.Thehighly densecoreareasgenerallyhavepoorqualityhouses,whileinthe moderately denseareas,whicharenewly developed,wellplannedresidentialestates,which are generallyofgood quality.

TheLocalGovernmentisblessedwithtwobanksblockindustries,schools,privateseco ndary schools,hotelsandpetrolstations.TheLocalGovernmenthasa poultry farmwithabout500 birds.There arefiveboreholesinthe wholeoftheAtiba LocalGovernment area.It has eight (8)maternity homes.They includethoseatAafin,Koso,Idaogun,Ilowagbade,Otefon, Igbonla, Agunpopo, andIsale-Oyo.Itcontrolsseven dispensarieswhich are:Aafin dispensary,Isale-Oyodispensary,Ajiroba dispensary,Onire-bara dispensary,Igbonla dispensary,Otefon dispensary,andIdaogundispensary.ItalsohashealthpostsatIsale-Oyo and Onire-Bara.

TheybelongtotheYorubaethnicgroupandthepredominantcropsintheLocalGovern ment Areaaremaize,yam,andcassava.Thecommonfoodsthey consumeinclude;*amala*with *gbegiri*and*ewedu*,*koko,ekotutu*(mouldedpap)with*moinmoin*or*akara,garri,egbo,b eans* e.t.c

3.2.2 Brief history of Iwajowalocal government

IwajowaisaLocalGovernmentAreainOyoState,Nigeria.Itsheadquartersare inthetownofIwereIle.Iwere-ile wasa formerpowerfulwartownintheold Oyoempire,dreadfulfor manyOyoindigenes,aswellastheAlaafintoattack.Iwere-ilebecametheheadquartersof IwajowaLGinDecember1996uponthecreationofthecr eationofthenewlocalgovernment under the Gen SanniAbacha'sregime.Other villagesandsettlementsincludeIganna,Idiko- ile, Idi-Agemo, Ijeomeso,Ayetoro-Ile,Ijio, Itasa, Ilaja-ile,Elekokan,Ofeegun,Tudi,Jokolo, andAyegunWasinmin.Ithasanarea of2,529km²andapopulationof 102,980atthe 2006

census.IwajowaLocalGovernmentconstitutesthefollowingwards:Agbaakin1,Agb aakin2,Iwere-Ile1,Iwere-Ile2,Iwere-Ile3,Iwere-Ile4, SabiGana 1, Sabi Gana 2, SabiGana3 and Sabi Gana4.

The mostpredominant occupationsofpeople ofIwajowaLocalGovernmentare farming,

trading,andtransportation.Theyoftenconsumefoodssuchas*amala*(madeupofeither yam

flourorcassavafour)withsoupssuchas*orunla*(driedokra),*ilasa*(okraleaf),vegetable s(*efo tete, ebolo, yanrin*), or*egusi*(melon); Poundedyam with soup; bush meat and beans.

3.2.3 Briefhistory ofIbarapa local government

TheIbarapasisaYorubapeoplegrouplocatedintheSouthwesterncornerofOyoState. The nameofthe groupisderivedfromalocalcultivarofthemelonplant,knownlocallyasEgusi Ibara,whichwashistorically acknowledgedby neighboring peoplessuchasthe Egbas, Ibadans,and Oyostobeextensively

cultivatedinthearea.TheIbarapapeoplearesaidto havemigratedintothearea,eitherasdissidentsoftheOldOyoEmpire,duringtheperiod sof constantinternecinewarfarebetweenthedifferentYorubastates,aswellasrefugeeses caping the transatlantic and trans-Saharan slaveraidingbusiness of theday.

TheTapasegmentofthepopulationissaidtohavebeenformed by theJihadriddenNupe refugeesfromthe northern Niger, who hadlosttheir traditionalstate to Fula jihadists.The predominantoccupationofthepeopleisfarming.Ibarapalandistraditionally madeupof7 principaltownsknownastheIbarapaMeje(Ibarapa Seven),andtheirsurrounding villages andfarmsteads.These towns includeIgangan,Eruwa,Aiyete, Tapa,Idere,Igbo-Ora,and lanlate.TapaandAiyeteare inIbarapaNorthlocalgovernmentarea,IdereandIgbo-Ora are inIbarapa Central,whileLanlateandEruwaarelocated inIbarapa Eastlocalgovernment. Thethreelocalgovernmentswerecreatedby theFederalGovernmentofNigeriaauthorities in1996whenIbarapa Eastwas carvedoutfromthe oldIbarapaLocalGovernmentwhile IbarapaCentralandNorthwerecarvedoutoftheformer IfelojuLocalGovernmentarea.The sevenprincipaltownscanbe subdivided further,basedonthevillagesthatareorganized around each of them.In totality, about 30 differentvillages litter thelandscape.

TheIbarapaareafallswithinlatitudes70.15' Nand70.55'Nandlongitudes30Eand30.30' E.Itislocatedapproximately100Kmnorthofthecoastof Lagos,andabout95Kmwesto f theOyostatecapitalandtheneighboringcityofIbadan.TheyborderYorubasofOnkoe xtractiontotheNorth(Iwajowa,KajolaandIseyin(LGAs)andYorubasofOyoextracti on totheEast(Ibadan).TheYewasorEgbadostotheWest,andtheEgbastotheSouth,Thear ea isapproximately2,496km²ingeographicalsizeandconsistsmostlyofrollingsavanna hwith forestssituatedalong thesouthernborderandinisolatedpatchesalong

withrivercoursessuchas theOgun.Thenaturalvegetationwasoriginally rainforestbutthathasbeenmostly transformedintoderived type savannaasaresultof several centuriesofslashesandburn agriculturalpractices.Mostofthelandliesatelevationsrangingbetween120and200m eters
abovesealevel,butrockyinselbergsandoutcropscanbeseenrisingto340meters(appro x.1,115 ft). Theypredominantlyengagein farmingand trading.

IbarapaLocalGovernmentconstitutesthefollowingwards:Oke-Oba,Anko,Isaba,Aborerin, New Eruwa, Sango, Oke-Imale,Isale Togun, OkeOtun,Itabo.

Thecommonfoodsthey consumeinclude;*amala*(madeupofeitheryamflourorcassava four) withsoupssuchas*morogbo,ilasa*(okra leaf),vegetables(*efoteteabalaye*), or*egusi* (melon); Poundedyamwithsoup;bushmeatandbeans.Other vegetablesconsumedinthe localityin thepast and present include*ewuro, efoigbo, eku, efo tete, shoko,ebolo.*

3.3Sampling technique

Amulti-stagesampling technique wasemployedinselecting householdsandrespondentsas follows:

Stage1: OyoStatewaspurposively selectedamongthesixstatesinSouthwestNigeria becauseofitssizeanddiversityofpeople.Ithasthreesenatorialdistrictsnamely:OyoN orth, Oyo Central, and Oyo Southsenatorial districts.

Stage2:ALocalGovernmentArea(LGA)wasrandomly selectedfromthe samplingframeof theLocal Government Areas in each senatorial zoneusing atableof random numbers.

Stage 3: AttheLocalGovernmentlevel,the sampling frame oftheenumerationareasand wardswasstratifiedintoruralandurbanenumerationareas/wards.Twowards(onerura land oneurban)wereselectedfromthestratificationprocessusing

simplerandomsampling technique, and the households wereidentified through the household listing.

Stage4: Asystematicrandomsamplingtechniquewasusedtoselectthe householdforthestudy.

Stage 5: Atthehouseholdlevel,a householdhead/othermembersofthehouseholdswere recruitedforthestudy basedontheinclusioncriteriaafterobtainingthe respondent'sinformed consent.

3.4 Study population

Therespondentsforthisstudywereapparentlyhealthyadults,men,andwomenaged40 years and above.

3.4.1 Inclusioncriteria

Thestudyincludedmaleandfemaleadultvolunteerswhowereapparently healthyandwere40years andaboveand areresidentsfor atleast 10years in the Yorubacultureand habits.

3.4.2 Exclusioncriteria

Thestudy excludedchildren,adolescents,pregnantandlactatingwomen;menandwomen whowere belowthe ageof40years,the respondentwhoshowapparentsignsofsicknessand ailment, and respondentswho havenot resided upto 10years inthe Yorubasetting.

3.5 Sample sizedetermination

Thesamplesizewascalculatedusing Stewart, 2002formulabasedon previousstudieson the prevalenceofchronicenergy

deficiency(CED)amongadultsinNigeria.Usinga samplesize formulaforthe single proportion:

$$n = \frac{z^2 (p)(1-p)}{E^2}$$

(Stewart, 2002) Z= Critical value at 95% confidenceinterval = 1.96.
p = assumedprevalenceofchronicenergydeficiency(CED)amongadultsinNigeriais 50%
E = Level of precision at 5% precision =0.05

$$n = \frac{1.96^2 * (0.5)\ (0.5)}{0.05^2}$$

$$= 384.16$$

Introducing 20% attritionrate:

20%(384.16) = 76.832
n = 384.16 +76.832
= 460.992
n = is approximated to**500**respondents

Table 3.1:Sample sizeallocation by wards

LGA					
ATIBA EAST		IWAJOWA		IBARAPA	
Agunpopo	39460	Shabina	18086	Okolo	16922
OkeAfin	12800	Ilaji-Ile	11536	Anko	16969
Total	52260		29622		33891
Overalltotal	115773				
	$=\frac{52260 \times 500}{115773}$		$=\frac{29622 \times 500}{115773}$		$=\frac{33891 \times 500}{115773}$
	=226		=128		=146
Total Sample		=500			

Atotalnumber offivehundred(500) households,twohundredandtwenty-six(226) householdsfromAtiba LGA,onehundred andtwenty-eighthouseholdsfrom IwajowaLGA, andone hundredandforty-sixhouseholdsfromIbarapaLGA were selected.A totalof 20% of therequiredsamplesizewas added to takecare of non-respondent,therebyincreasing the samplesizeto600respondents.However,thetotalnumber ofhousehold/respondentsthat completedthestudywas589-AtibaLGA-200households,IwajowaLGA-187households, andIbarapaLGA -202 households completed thestudy.

3.6 Data collection technique

Avalidatedsemi-structured,interviewer-administeredquestionnaire wasusedtoobtain informationfromrespondentsby trainedresearchassistantswhoadministeredthe questionnaire andotherinstruments. Focusgroupdiscussions were carriedout in each of the wardschosenforthesurvey.Atotaloftwelvefocusgroupdiscussionswere carriedout,six formen, and sixforwomen.

3.7 Instrument fordatacollection

Instrumentsfor data collectionwere tape recorderfor focusgroup discussion,validated and pre-testedasemi-structuredquestionnairewhichwasusedfordiscussionanddatacollection, stadiometerandcalibratedweighing scaleformeasuring theheightandweightof respondents. The questionnaire contained different sections such as:

3.7.1 Respondents'socio-demographic andsocio-economic data

Twenty-three itemsemi-structuredinterviewer-administeredquestionnaireswere usedto collectdataonthesocio-demographicaswellasonthesocio-economiccharacteristicsofthe respondents.The respondentswereamongmany

otheritemscategorisedbasedontheir Location (rural or urban),Age, sex, ethnicity,marital status, typeof marriage, religion, level of Educationlevelof income, occupation,typeof house, type of toilet facility,sourceof drinking water,typeofcookingfuel,source/methodoflighteningandmethodofrefuse disposal

3.7.2 Focusgroupdiscussion

A totalof twelve focusgroup discussions (FGDs)(whichcomprisedof one malegroup and onefemalegroupperwardwitheachgroupconsisting10people)wereconductedinthet hree chosenLocalGovernmentAreas(LGAs)(Atiba,Ibarapa,andIwajowa)representingt woper ward (onemale and theotherfemale).

Mostof therespondentswereadultmale andfemalewhowere betweenthe agesof 50years andabove.They werepredominantly ofYorubaethnicgroupwhoresideinurbanandrural communitiesof theselectedLocalGovernmentAreasandwere peoplewhowere knowledgeableabouttheirimmediateenvironmentandcustodiansofculture andtradition peculiar toeachcommunity.The interviewer teamconsistedof a moderator,a recorder/ secretary,andatimekeeper. Well,structuredopen-endedquestionsthatwere relevanttothe studywerepreparedanddiscussedinaninteractivemannerwitheachparticipantgiving equal opportunitiestocontribute. Theinteractive sessionwhichfocusedontheir perceptions, opinions,beliefs, attitudes,andexperiencesabouttheir food culture,preferencesandhabits lastedforaboutonehour ineachofthegroups.Their responseswerewelldocumentedin writing,ontapeandvideo(followingtheirpermissiontorecord)andwerelatertranslate dfor data analysis.

Figure3.3: Addressingsomeofthe respondents during the focus group discussion

Figure3.4: A cross-sectionofthemale respondents during focus groupdiscussion

Figure3.5: Across-sectionofthefemalerespondents duringfocus group discussion

Figure3.6: Asample ofthe foodmodel used during the interview

Figure3.7: Interviewing the respondents

.7.3 Foodcultureandhabits

TheFoodcultureandhabitoftherespondentswereassessedusing well-structured interviewer-administeredfoodfrequency questionnaires.Informationwasobtainedonthe choice offoodandpreferences.Thequestionnairecontaineditemsfromthesixclassesof foodandvariablessuchasthenumberofconsumptionperday,perweek,occasionally,rarely andneverwasusedasindicators.Also,themealpatternoftherespondentswasassessed using a24 items questionnairethat centered on the mealpattern and the attitudeof therespondents towardsahealthyeatinglifestylelikehowmanytimesdothey eatdaily?Mealskipping attitudes, snacking, portion sizes, food preparation, and combinations,etcwere assessed.

3.7.4 24-hourdietary recall

Detailedinformationaboutallfoodsandbeveragesandthedietary supplementsconsumed by therespondentinthepast24hoursfrommidnighttomidnightthepreviousday was collected.Twovisitsweremadetoeachrespondentandduring eachofthevisits,the

respondentsweremadetoremember allthattheyconsumedwithinthelast24hoursandsuch werenoted.Foodmodelsandpictureswereusedtodemonstratethecorrespondingquantities tohelprespondentsrememberandjudgeportionsizesoffoodtheyconsumedandtheweight wereappropriately recordedingramsintherespondents'questionnaires.Fortheonesthey boughtfromfood vendors,theamountwasnoted andthecorresponding amountwasbought fromfoodvendorsinthe sameenvironmentandtheweightin gramsorservingspoonsnoted andrecordedintherespondents'questionnaires.The data wasanalysedfor the nutrient compositions using the total dietaryanalysis software (TDA) and were categorised as inadequate (less than 80%), adequate (80-120%)and excess (above120%)

3.7.5 HealthRelatedQuality ofLife(QoL) of respondents

Health-relatedqualityoflifewasassessedusingapatientmultidimensionalquestionnairethat coveredthe respondents'physical,social, emotional,cognitive, work- orrole-related, and spiritualaspectsaswellasawidevariety ofdisease-relatedsymptomsandtherapy-induced side effects.

TheHealth-relatedqualityoflifewasusedtoassesshowthe respondent'swell-beingmay be affected bytheireatinghabit. This was assessed under several subscales which include:

RolePhysical(RP): Thissubscaleassessestheeaseofperformingsomethingsby the respondent.It also assesses if theyarelimited in anykind or theyaccomplished less.

PhysicalFunctioning(PF): Thisassessesthephysicalfunctioningoftherespondenta nd questions about the abilityto climb several flights, to moderate activity,to batheor dress self.

Bodily Pain(BP): Thissubscalelooksasiftheirbody hasbeeninanyway affectedby bodilypain.

GeneralHealth(GH): Thissubscalelooksatthegeneralhealthoftherespondents.Itlo oks asifthey getsickeasily,ifthey areashealthy asanybody,iftheir healthworsensoriftheir health is excellent.

RoleEmotional(RE): Thissubscaleassessestheemotionalwellbeingoftheresponde nts, lookingat if theywork less carefullyortheyaccomplish less.

Reported Health transition(RH):

PhysicalHealth(PHH): Thissubscaleisanoverallscaleforthephysicalhealthofthe respondentsandincorporatesothersubscaleslikeRolePhysical(RP),Bodily Pain(BP), General Health (GH)

Vitality(VT): Thissubscalelooksattheoverallvitalityoftherespondents,assessingif they'vefeltworn out or tired in theprecedingdays.

MentalHealth(MEH): Thissubscalelooksattheoverallhealthoftherespondents.It incorporatesother subscaleslike Vitality (VT),SocialFunctioning(SF),Role-Emotional (RE), and Mental Health(MH)

SocialFunctioning(SF): Thissubscaleassessestheoverallsocialimpactaspectofthe respondent's life.

Itemswerereverse-scoredsuchthathigher scoreswouldrepresentbetter HRQoL.To combine the itemsoneachfactor intosingle-scale scores,rawresponsestothe itemswere converted to standard(z)scores. Themean z-scores fortheitems in each scalewere calculated.Simplemeanswereusedratherthanweighingtheitemsby theirfactorloadings. Theresultingmeanswerethen converted to T-scores to createadistribution ofscores scaled to100.Thecloserto100 arespondentscoreonanyofthesubscales,thebetteristheirhealth performanceon that subscale.

3.7.6 Body mass index determination

Astadiometer wasusedtomeasure therespondents'height.The respondentswere askedto standerectwiththeirlegsfully straightenedonthebaseplate.Theirshoeswerepulledoff

andtheirheadbarsweremadetorestlightlyontheirhead.Thebarefeetwereplacedslightly apartwhilethebackofthehead,shoulderblades,buttockandheelstouchedtheverticalboard. Theheight readings werethen taken to thenearest1 cm.

Figure3.8: Arespondent taking hisweight measurement

Thebody weightsoftherespondentsweredoneonasmoothlevelsurfaceusingaweighing scale.Therespondentsweremadetostanderectonthescalebarefootedwithnothingonthem exceptheirlightclothing.The weightmeasurementwasdisplayedandallowedtostabilize afterwhich itwas recordedintherespondents'questionnairesinkilogrammes.Theresulting weightinkilogramdivided by thesquareoftheheightina centimeteroftherespondentwas used to calculate theindividual respondent's bodymass index(BMI).

3.8 Translationof protocol:

The instrumentfor data collectionwastranslatedintoYorubalanguageandback-translatedto Englishtoensurecontentvalidity.Thistranslationwastoenhance respondentswho donot understand EnglishLanguagebut understandYorubato participateactivelyin thestudy.

3.9 Questionnairevalidity

Reviewofrelevantliterature,reviewedby experts,statisticiansandresearcherswerecarried outtoensure faceandcontentvalidity.Apre-testwasconductedinIdoLocalGovernment Areatotestthevalidity andreliability ofthequestionnaire.Toconfirmthevalidity ofthe instrument, analysis of thepre-test datawas doneusingCronbach's Alphacorrelation coefficientat ($p<0.05$)usingStatistical PackageforSocialSciences (SPSS)Software (version 20).

3.10 Data analysis

Qualitativedatawereanalysedthematically whilequantitativedatawereanalysedusing descriptive statistics.Data entry,checking,cleaning,andanalysis weredone usingthe StatisticalPackage for Social Sciences(SPSS)Software (version20).The 24-hourdietary recallwasconvertedintothe weightoffood ingramsandanalysedfor nutrientintake using theTotalDietaryAssessment(TDA)software.Descriptivestatistics,Chi-squaretest,student t-test,correlation, andmultiple regression analyseswerecarried outat5% levelof significance toelucidatetherelationshipbetweenthesocio-demographicvariables,the nutritional status and food habits of respondents.

3.11 Ethical consideration

Ethicalapprovalwasobtained fromthe UI/UCHInstitutionalEthical review board. Written informedconsentwasobtainedfromthestudy participants.Theprinciple ofconfidentiality, beneficence,non-magnificence,voluntaryparticipationandwithdrawalfromthestudyatany pointin timewithoutrepercussion was ensured.

CHAPTERFOUR

RESULTS

Specific Objective1

Todeterminesocio-demographic andsocio-economic householdcharacteristicsthat influencefoodhabits of adults in OyoState.

4.1 Socio-demographic characteristics ofrespondents

Thesocio-demographiccharacteristicsoftherespondentsareshowninTable4.1.Generally, a largerproportionofbothruralandurbandwellerswere female (51.4%and62.3% respectively).Morefemales(79.7%) livedinurban areascomparedwithrural areasin IbarapaLGA.IwajowaLGAhadmorefemaleslivinginbothrural(63.2%) andurban(59%) areas.AtibaLGA,however,hadmoreofitsmalepopulationdominating boththerural (52.1%) and urban (55.8%) areas.

Generally,therespondents were aged betweenfifty(50)and(70)years (urban-46.0%,rural-49.8%).Thisisalsothesametrendseenin Iwajowa(urban-54.0%,rural-49.0%)and Ibarapa LGA(urban-55.5%,rural-56.8%).OnlyAtiba LGAhadmoreofitsUrbanresidentslessthan 50yearsofage(55.8%)andmanyofitsruraldwellersbetween50and70yearsofage (44.8%). AtibaLGAhadonly 1%ofitsurbandwellerstobeofHausaEthnicity,and1%oftherural dwellers to beofIgboDescent.However, most ofboth theUrban (99.0%) and rural (97.9%) residentswereofYorubaethnicity.IwajowaLGAhadallofitsresidents,bothUrban(100%) andRural(100%) fromtheYoruba ethnic group.UrbanresidentsinIbarapa (59.7%) and Iwajowa(71.4%)LGAspracticemoreofPolyandry systemofmarriage.However,ahigher proportion of therespondents reported onehusband or wifein all theLGAsexcept forurban

residentsinIwajowaLGA,whichreportedahigherproportion(37.3%)havingtwo(2) wives/ husbands.AtibaLGA hadthesameproportionof peoplewithnoeducationandtertiary educationamong itsurbanresidents(29.8%).InIbarapa(Urban-64.0%,Rural-66.2%), Iwajowa(Urban-87.9%,Rural-64.7%)andGenerally (Urban-60.4%,Rural-66.9%),more peoplereportedhavingnoeducation,regardlessofthelocalityoftheirresidence(i.e. ruralor Urban).

MostUrbanresidentsinthethreeLGAs,Atiba,IbarapaandIwajowaweretraders(61.5 %, 58.7%,and50.5%,respectively).Ina similarway,mostruralresidentswere farmers except forIwajowaLGAwhichhad most of its residents as traders(50.6%). ThemainreligionpractisedinAtibaLGAisIslam(Urban-76.9%,Rural-51.6%)whilethat ofIbarapaisChristianity (Urban-77.7%,Rural-65.8%).InIwajowaLGA,however,alarger proportionofurbanresidentspractiseIslam(82.7)whilethemajority oftheruralresidents areChristians (64.7).

Table 4.1:Socio demographic characteristicsofrespondents

Variable	Atiba		Ibarapa		Iwajowa		Combinedsample	
	Urban n(%)	Rural n(%)	Urban n(%)	Rural n(%)	Urban n(%)	Rural n(%)	Urban n(%)	Rural n(%)
Sex								
Male	58(55.8)	50(52.1)	26(20.3)	43(58.1)	41(41.0)	32(36.8)	125(37.7)	125(48.6)
Female	46(44.2)	46(47.9)	102(79.7)	31(41.9)	59(59.0)	55(63.2)	207(62.3)	132(51.4)
Agegroup								
<50years	58(55.8)	36(39.6)	20(15.6)	9(12.2)	1(1.0)	5(5.7)	79(23.8)	52(20.2)
50 –70years	30(28.8)	43(44.8)	71(55.5)	42(56.8)	54(54.0)	43(49.4)	155(46.7)	128(49.8)
>70years	16(15.4)	15(15.6)	37(28.9)	23(31.1)	45(45.0)	39(44.9)	98(29.5)	77(30.0)
Ethnicity								
Yoruba	103(99.0)	94(97.9)	127(100.0)	72(97.3)	100(100.0)	87(100.0)	330(99.7)	253(98.4)
Igbo	0(0.0)	1(1.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	1(0.4)
Hausa	1(1.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	1(0.3)	0(0.0)
Others	0(0.0)	1(1.0)	0(0.0)	2(2.7)	0(0.0)	0(0.0)	0(0.0)	3(1.2)
Marital status								
Married	94(91.3)	83(87.4)	84(65.6)	60(81.1)	62(62.0)	56(64.4)	240(72.5)	199(77.7)
Divorce/Separate	0(0.0)	0(0.0)	10(7.8)	3(4.1)	8(8.0)	5(5.7)	18(5.4)	8(3.1)
Widow	9(8.7)	12(12.6)	34(26.6)	11(14.9)	30(30.0)	26(29.9)	73(22.1)	49(19.1)
Type of marriage								
Monogamy	59(57.3)	66(69.5)	50(40.3)	38(51.4)	28(28.6)	53(62.4)	137(42.2)	157(61.8)
Polygamy/Polahandry	44(42.7)	29(30.5)	74(59.7)	36(48.6)	70(71.4)	32(37.6)	188(57.8)	97(38.2)
No of wives orhusband								
1	48(68.6)	64(74.4)	48(58.5)	41(59.4)	17(28.8)	50(72.5)	113(53.6)	155(69.2)
2	17(24.3)	16(18.6)	19(23.2)	19(27.5)	22(37.3)	15(21.7)	58(27.5)	50(22.3)
>2	3(4.3)	2(2.3)	7(8.5)	8(11.6)	9(15.3)	4(5.8)	40(19.0)	19(8.5)
Education category								
None	31(29.8)	66(69.5)	80(64.0)	47(66.2)	87(87.9)	55(64.7)	198(60.4)	168(66.9)
Primary	22(21.2)	19(20.0)	26(20.8)	16(22.5)	10(10.1)	24(28.2)	58(17.7)	59(23.5)
Secondary	20(19.2)	8(8.4)	15(12.0)	7(9.9)	1(1.0)	3(3.5)	36(11.0)	18(7.2)
Tertiary	31(29.8)	2(2.1)	4(3.2)	1(1.4)	1(1.0)	3(3.5)	36(11.0)	6(2.4)
Occupation category								
None	1(1.0)	1(1.1)	15(11.9)	1(1.4)	11(11.1)	14(16.1)	27(8.2)	16(6.3)
Trade/business	64(61.5)	35(36.8)	74(58.7)	23(31.1)	50(50.5)	44(50.6)	188(57.3)	102(39.8)
Farmers	9(8.7)	45(47.4)	17(13.5)	43(58.1)	27(27.3)	20(23.0)	53(16.2)	108(42.2)
Civilservants	15(14.6)	1(1.1)	3(2.4)	0(0.0)	0(0.0)	2(2.3)	18(5.5)	3(1.2)
Artisans	14(13.6)	13(13.7)	17(13.5)	7(9.5)	11(11.1)	7(8.0)	42(12.8)	27(105)
Religion category								
Christianity	19(18.3)	45(47.4)	95(77.2)	48(65.8)	15(15.3)	55(64.7)	129(39.7)	148(58.5)
Islam	80(76.9)	49(51.6)	28(22.8)	25(34.2)	81(82.7)	30(35.3)	189(58.2)	104(41.1)
Others	5(4.8)	1(1.1)	0(0.0)	0(0.0)	2(2.0)	0(0.0)	7(2.2)	1(0.4)

4.2 Socio-economic characteristics ofrespondents

The socio-economiccharacteristicsoftherespondentsare showninTable4.2.Self-employmentisthemajoremployment typeamong therespondents.Mostoftherespondents reportedthattheyareself-employed,regardlessofthelocality oftheirresidence.InIbarapa LGAforinstance,94.3%ofitsruralresidentsareself-employed.RespondentsinIbarapaand Iwajowaaremajorly low-incomeearners.AmongurbandwellersinIbarapaLGA,66.4% earnless than₦10,000amonth. Thisissimilar to 55.6%amongruraldwellers inthesame LGA. IwajowaLGAhas 74.0%ofitsurbandwellers,and80.5%ofitsruraldwellersearning lessthan₦10,000.AtibaLGA,however,hasmore(48.9%)ruraldwellersearninglesst han ₦10,000,andmore(51.9%)urbandwellersearningbetween₦10,000and₦49,000.In allthe LGAs, less moneyis spent on food. Most of the respondents acrossallstrata in alltheLGAs reported spendingless than ₦10,000 on food.

Table 4.2: Socio-economiccharacteristics ofrespondents

Variable	Atiba		Ibarapa		Iwajowa		Combinedsample	
	Urban n(%)	Rural n(%)	Urban n(%)	Rural n(%)	Urban n(%)	Rural n(%)	Urban n(%)	Rural n(%)
Employment status								
Unemployed	2(1.9)	1(1.1)	6(5.1)	2(2.9)	7(7.2)	7(7.2)		
Self-employed	74(71.2)	80(84.2)	91(77.8)	66(94.3)	88(90.7)	59(75.6)		
Wage-earner	9(8.7)	3(3.2)	12(10.3)	1(1.4)	2(2.1)	4(5.1)		
Retired	4(3.8)	10(10.5)	8(6.8)	1(1.4)	0(0.0)	4(5.1)		
Others	15(14.4)	1(1.1)	0(0.0)	0(0.0)	0(0.0)	0(0.0)		
Incomelevel								
<10,000	29(27.9)	46(48.9)	83(66.4)	40(55.6)	74(74.0)	70(80.5)	186(56.5)	156(61.7)
10,000 – 49,000	54(51.9)	44(46.8)	39(31.2)	20(40.3)	24(24.0)	16(18.4)	117(35.6)	89(35.2)
=/>50,000	21(20.2)	4(4.3)	3(2.4)	3(4.2)	2(2.0)	1(1.1)	26(7.9)	8(3.2)
Amount on food								
<10,000	62(60.2)	76(80.9)	111(90.2)	62(86.1)	91(91.0)	84(96.6)		
10,000-19,000	11(10.7)	8(8.5)	8(6.5)	5(6.9)	4(4.0)	3(3.4)		
20,000-29,000	19(18.4)	7(7.4)	1(0.8)	3(4.2)	1(1.0)	0(0.0)		
30,000-39,000	10(9.7)	1(1.1)	0(0.0)	1(1.4)	2(2.0)	0(0.0)		
40,000-49,000	1(1.0)	0(0.0)	3(2.4)	0(0.0)	0(0.0)	0(0.0)		

Specific Objective2

Toidentifychanges in food habits of adults in Oyo State

4.3 Changes in foodhabits ofadults inOyo State:Focus groupdiscussions

Mostoftherespondents(77.8%)wereadultmaleandfemalewhowerebetweentheages of50yearsandabove.TheywerepredominantlyofYorubaethnicgroupwholivedinur banand ruralcommunitiesof the selectedLocalGovernmentAreasandwerepeople who were knowledgeableabouttheirimmediateenvironmentandcustodiansofculture andtradition peculiar to each community.Many oftheparticipants(40.5%)wereoflowsocio-economicstatusbasedonresponsesto someofthequestions. Morethanone-third(37.9%)oftheparticipantscanreadandwrite judging fromtheresponsestoissuesraisedandspokenwords.Abouthalf(50.2%)ofthe participantsengagedinsubsistentfarmingandasmallproportionoftheirfarmproduce served thepurposeofgeneratingincomeforthefamily.Manyofthewomenreportedlyjoinedt heir husbandstowork onthefarm.It could alsobeinferred thatparticipantsmainlysourcedtheir foodsfromsubsistencefarming,althoughsomeother fooditemswere boughtinthemarket. Narrating theirexperiencesandordealintheirjob,oneoftheparticipantsinarural communitystated that:

"OurmajorproblemhereistheFulanisrearing theircattletograzeourcropsandfarmland. This practiceis hindering our commitmentto farmingbecausetheyaredisruptingand eating upour farm alot. Please, discussourplight withpeoplein authoritysothat theycan cometo our rescue".

Anothermaleparticipantrevealedthattheywerepredominantlyagrariansashereporte dthat, "Ifwecangobacktoourformerway ofcultivationwhenwecanleaveourcropsforalong

timebeforeharvestingandnotnecessarily usechemicalsandfertilizer.Thisstepwillbeof help to resuscitateourfood habits".

Oneof theparticipants pointed out that,"Ourdietinthepastmadeushealthywithstrongbonesbutnowfoodseatendon'tgiv emuch energy.Mostofthefoodsweeatdon'tgowellinthebody systemsoit leadstostrokeand otherdiseases. Magi andsugar arewhat weeat in thefoodnowand wehaveno choice. This is due to civilization, andimpatienceof everyoneeven in thekitchen."Participantsalsopointedoutthat,improvementintechnology infarmingisaffectingthe qualityoffarmproductsinthepresenttime.Intheiropinion,theadditionoffertilizerand chemicalstoplantswasobservedtobe detrimentaltopeople'shealth.Moreover, improvementsinspeciesof farmseedlingswerealsonotedtobe harmfultopeople'shealth. Theyarguedthatseedlingsusedonfarmsinthepastweremuchbetterthanwhatthey use now in terms of farmyield, nutrition, and taste. Accordingto some participants,"You seeinthe pastour parentsdonotplantyamsandmaize withchemicals. Whenwe consumedsuchfoods there isnofear of harm tothe body.Butpresently,applicationsof chemicalsappliedtoyam,cassava,maize,etc,arecausingharmtothebody andwedon't know what to do".Another participant added that,

"Inthepastwhenyouroastmaizeduring maizeseasonsyouwillperceivethearoma(scent) fromafardistance.Butnowyou can'tperceivesuch aroma asaresultof thechemical applicationduring planting.Thoughchemicalsappliedtothefarmhaveadvantages,italso hasdisadvantages.Forexample,applyingherbicidesonthefarminsteadofclearingthe bush forfarming wouldreducethestressofclearingbutitisalso destroying wildvegetables causingthem to go into extinction".

Food culture and eatinghabits of adults' foodintherightqualityandquantity isessentialtolife;itisalsoimportanttoeatitatthe righttime.Breakfastwhichisthefirstmealoftheday iseatenevery day inalltheindexof urbanandruralcommunitiesexceptduringthefastingperiod.However,thetype/kindo

ffood takenasbreakfastvariesfromoneareatoanotherlargely onavailabilityandaffordability. Thebreakfast is madeup largelyofcarbohydrateand protein; forinstance,some community membersprefereating lightmeal(liquidhotpapor‘koko’withakara ormoinmoin, pap mouldedinleaves,beans,whitemaizeporridgeor‘egbo’andrice)orheavy meal(‘amala’ and‘gbegiri’,poundedyamandvegetables)asbreakfast.According tosomewomen participants in an urbancommunity,

“Wetakekoko (hot pap)and eat eko tutu (pap mould in leaves)”

“Wetakehot pap andeat eko tutu and ifthereis ricewecook it. . .” “Amala and‘gbegiri’(beans soup), some prefer ’moinmoin’ and hot pap

‘Moinmoin’and‘ekotutu’(papmouldinleaves,(Someofthefemaleparticipantsfrom urbancommunitystated)

Adultmen inanurban community,however, pointed outthatthere are differencesinfood consumptionpatternsinyesteryearscomparedwithtodayinthatinthepastfoodareprep ared athomeandeatenatleisurebutthecaseisnotsotoday.According tooneofthemale participants,

“Yes,thereisdifference,inthetimepastwhen‘Onini’(oldendayscoininNigeria)wasb eing spentwheneverwewakeup,ourparents will giveus‘Onini’tobuyhotpap and akaraorour parentswouldprepareitfor usathomebutnowyouhavemoreof‘koko’hawkedinthe morning.Weare freetoeatwhateverwelikeinthepastbutnowwecan’t.Weeatwhatwe see.Evenhotpapthatweusually takewiththe spooninthetimepastisnotavailableagain instead wetake‘koko’ now and buy‘amala’from arestaurant”.

Participantsalsopointedoutthattherearemarked differencesbetweenthe manners inwhich lunchiseaten.Intheir opinion,foodcomposition andpreparationintheoldendaysisquite differentfromtheway itiscombinedandpreparedtoday.They pointedoutthatmostofthe ingredientsusedinthepreparationofmealsnowadaysare tooartificial.One ofthe participants pointed out that,

“The soupisquitedifferent.Inthepastwe don’teat‘Maggi’, cannedtomatoesandHausa’s onions,thekindofonionsweconsumedthenwasleafyonions,locustbeans,andourmothers usedastonetogrindpeppernotmillingmachine.Wegotothefarmtohuntanimalsforsoup. Wecookbushmeatandokrotogetherwhichisusually sweettotaste.Butit’snotavailable in present days”.

In terms of effectsof foodsconsumed inthe presentday,almostallparticipantsinallthe communitieswere unanimousinresponding thatsomeofthefoodseatenthesedaysare not healthytothebody,andaredetrimentaltopeople’swellbeing.Accordingtothemmostofthe foodspeopleareeatingtodayareloadedwithcondimentsandseasoningswhichtheyperceive to be unhealthy. As oneof theparticipants pointed out,

“Inthepast,weconsumed‘obeosiki’(egusisoup),okro,‘ilasa’,‘morogbo’,‘obeajara’. But, nowsomeofourwomendon’tknowhowtocook‘ilasa’or‘morogbo’.‘Obeajara’is very goodforthebody.Inthepastwhen youcooksoupwith‘enmiarugbo’leaves,thesoupworks wellin thebody.Presently,thesoupweconsumecontaincurry,Maggi,etc,whichcauseharmtothebodylike cancer, ulcer,etc.Inthepast,our parentsusedlocustbeanand‘ogiri’. Thiscivilizationis reallycausingharm to us in this present day”.

Itwasalsoaddedthatfoodpreparation,processing andthematerialsusedhavesignificant effectsonhealth.For instance,anotherparticipantpointedoutthatcookingpotsusedinthe preparationoffoodhelpinthepreservationofsuchfoodmostespeciallysoupandalsohave aneffectonhealth.Intheiropinionsonth e westernizationoflifestyle,theperceivedhealthoutcomesofallthesearereductioninlifeexpectancy anda reductioninbodyfunctioning. Accordingto one of themaleparticipants,“Inaddition,inthepast,theyuseearthenpottocooksoup,butnowitisaluminumpotwhich hassomedepositof chemicalsinside. Someof the diseaseswesufferareasaresult of the

chemicalsweconsumethroughtheinteractionbetweenfoodandmodernday pot.Also,an earthen pot keeps soup warm for alongtime than the aluminumpot".

A femaleparticipant added furtherthat,"Inthepast,weused'ewedu'butitisdifferentnow.Thereasonisthat;thewayweplant'ewedu'atpresentaffectsitsqualitybecausewareencouragedtoaddsomechemicalstothe soilbeforeplantingorevenafterplanting.Bythetimewecooksuch'ewedu'itwillnotdrawl andthetextureisharsh.By nowyouwillnoticethedifferencebetweenthe'ewedu'planted withorwithoutchemicalsbecausethelatterwillbevery greenishthantheother.Even vegetablesandothercropssuchas yam,cassavaareplantedwithchemicals. Inthetimepast, therewereno such things"(amiddleaged femaleparticipant,Iganna).

Another participant added that"Theeffectisthatitreducesthelongevity oflifeandcausesbody weakness.Nophysical activities like before"."OurbodieswerequitestrongthanthepresentdaybecausenowweconsumeMaggialotin soups which affect ourbodyand makes us weak".

Regardingthetimebreakfastiseaten,amajorityoftheparticipantspointedoutthatbreakfast iseatenbetween7 amand8am.However,aparticipantnotedtherecould bean exceptionin whichbreakfastcouldbeeatenlatestby9am.Inaddition,afemaleparticipantinoneofthe urbanareaspointedoutthatbreakfastiscompulsoryforeveryoneinordertoavoidillhealth. Accordingto her,

"Wemusteatbreakfastearly topreventunforeseenhealthissue.So,weeatasearly as7am even if it is a small meal(hot pap) and later wewilleat another food".

Whenaskedaboutthepeculiartherapeuticfoodsintheircommunity,aparticipantpointedoutthattherearetherapeuticfoodsinthecommunity(hotpap,'ekotutu','moinmoin','akara','amala',poundedyamandporridge);suchfoodswerebelievedtohelpthesicktorecover on time.In her words, thetherapeuticfoods are"Ogi,(hot-

pap),andekotutu,(papmouldedinsideleaves),moinmoinandakara.Itisbelievedthat when ahot pap isgiven to anyonethat is sick, he/she will get well".

Othercommonindigenoustherapeuticvegetablesmentionedare'ugwu',bitterleaf,'g bure'and 'gbagba'.

Foodstakenfor lunchinallthecommunitiessampledare made upof carbohydrate,protein, andvitaminslargely.For instance,amala (madeof eitheryamor cassavaflour) withsoup ('morogbo', 'ilasa' [okroleaves],vegetables ['efo tete abalaye']or 'egusi' [melon]with vegetables);poundedyamwithsoup;meatandbeans.Itwasalsonotedthatthe common vegetablesinthe pastandthe presentare 'efo tete abalaye', 'ewuro','igbo', 'pekun' 'efo tete', 'shoko'and 'ebolo'. As oneof the femaleparticipants pointed out,

"Somepeopleifchancedcanpound yam,somebeansbutmajorly,weeat'amala'(yamflour) and'ilasa'soupwhichcontainlocustbeans.Uptodate,wedon'tuseMaggi®fordrawso up (elastic/vegetablesoup)weuselocustbeans.Whenpreparedforsomeonethatjustgave birth totake,itnourishesherbody.Butnowweuse Maggifor stew althoughinthe olden days our mothers used leafyonions and locust beans for stew".

Dinner iseateninallthe communitiesalthoughthecontentofdinnervaries fromone communitytoanother.'Ekotutuwithmoinmoin/Akara poundedyam,riceandspaghettiare commonfooditemseatenasdinneralthoughthisislargely dependentoneachfamily's economic powerandability.It wasfurtherstressedthatpoundedyamisone ofthemajor mealfor dinner inthetimepast,however,it'snota commonfoodfor dinner again because someyouthoftodaywhoaresaddledwiththeresponsibility ofpreparingthemealcannot poundyam.

Accordingtosomefemalediscussantsintheurbanareas,someofthemodernfoodscom mon inthecommunityandconsumedmostby thechildrenarecannedfoods,noodles,rice, Spaghetti,Semovita,andwheat.Itwasalsomentionedthatchildrenaremadetoeatfruit sand vegetables inaddition to thesemodern foods.

Whilemakingacomparisononhealthbenefitsoffoodspreparedandeatenintheyesterye
ars
andthepresent,itwaspointedoutbysomefemaleparticipantsthattheoldendayfoodspr
eparedandeatenwerehealthier
thanthepresentones.Thiswassobecausefoodsinthose
periodswerecultivatedwithlittleornochemicalsaddedtotheplanting
processunlikewhat obtainsinthepresentday.

Accordingtooneofthefemalediscussantsinanurbancommunity,“Intheoldendays'fo
ods,theprocessingmethodespeciallyplantingisquitedifferent.Present
dayfoodsareplantedwithchemicalsandfertilizerthereby resultinginearly
maturingand harvestingof foodcrops”.

A femaleparticipant in oneurban communityalsoexplained that“Also,
vegetableswithoutfertilizer taste goodandpalatable than fertilized
ones”.Varioustypesoffruitsweremen tionedtobecommoninmostoftheindexurbanc
ommunities
andtheywereeatenregularly.Suchfruitsincludebutnotlimitedtomangoes,cashew,or
ange, pineapple, pawpaw, banana and plantain. However, oneof
thefemaleparticipants in another
urbancommunitywasofcontraryviewontheavailability
ofthesefruits.Accordingtoher, fruits are costlyand notmanypeople can affordto
buyitthesedays.

In her words,“Butwedon’thaveaccesstofruitslikebeforeduetoavailability
andcost.Wehavetobuy themfromafewpeoplethatareplantingthemon
theirfarms.Even ifourhusbands gotothe
farmandbringfruitsinsteadofgivingitoutfreelyweselltomakemoney.Unlikebeforet
hat, wehavefruits on an individual’s farm, it is scarcetodayand
weconsumefewerfruits.”

Specific Objective3

Toidentify relationshipsbetweensocio-demographicandsocio-economichousehold characteristics that influencethe nutritional status of adults in Oyo State

4.4: Householdcharacteristics ofrespondents

Table 4.4 shows the householdcharacteristics ofthe respondents.Generally, and in each of thethree LGAsofAtiba,Ibarapa,and Iwajowa,mostoftherespondentshadahouseholdsize that consistsof lessthanor exactlysix(6)members. OnlyUrban dwellers in Atiba LGAhad ahigh proportion (49.5%) having ahousehold sizeof morethan sixpeople.

AtibaLGAhaslessofitsurbandwellers(41.3%)owning houses.Thisisnotthesameasits ruraldwellerswith72.3% owninghouses.InIbarapaandIwajowaLGAs,mostof the respondentsownedtheir personalhouses.IwajowaLGA, however,reportedhigher proportionsinboththeruralandurbanlocalitiesthanIbarapaandAtibaLGAs(93.8%,85.7% respectively).

Exceptfor urbandwellersinAtibaLGA,whichreportedahigherproportionofitsresidents livinginFlatswithbedrooms(49.5%),mostoftherespondentsreportedlivinginotherttypes of accommodation.Inthe ruralArea ofIwajowa,however, the proportionwho livedinflats with bedroom and other types of accommodation was the same(31.4%).

Mudwasthemainmaterialusedinmostoftherespondents'houses,withonlyurbanresidents inAtibaLGAbeingtheonlyexceptionalcase.IntheUrbanareaofAtibaLGA,most(74.0%) of thehouses in which therespondents lived were built with concrete blocks.

Themajorflooringmaterialusedinallthe LGAs,regardlessofthestrata,wasconcrete.Only

RuralresidencesinAtibaLGAweredifferent,where62.1%usednoformofflooringmaterial whatsoever.

InalltheLGAs,themainroofingmaterialusedwascorrugatedironroofing sheets,with respondentsreporting from64.4%inAtiba-Urbanto100%inIbarapa-RuralandIwajowa- Rural.AlltherespondentsinIbaraparuralandIwajowa ruralusedcorrugated iron sheetsas the main roofingmaterial.

Themainsourceofdrinkingwaterwasgenerally borehole.However,mostoftherural residentsinAtibaLGA(47.4%)usedSurfacewaterasthemainsourceofdrinking water. Also,urbanresidentsinIwajowaLGAusedwellwatermostly (42.0%)astheirmainsource of drinkingwater.

MostoftherespondentsintheurbanareasusedKeroseneasthemainsourceofcookingfuel. Atiba LGA,forinstance, had58.7%ofitsurbanpopulationusingKerosene,whichissimilartothatofIbarapaLGA,with55.2%.However,alargeproportionofurbanresidentsinIwajowaLGA (42.9%) used Charcoalas the mainsourceoffuel forcooking.

Thepublicpowersupply wasthemainsourceoflighting inmosturbanareasoftheLGAs. However,IwajowaLGAhadmostofitsurbanresidents(47.5%)usingcandlelightasasource oflightingasagainstthoseofIbarapa(54.7%)andAtibaLGA(69.2%)whichreportedpublic powerasasource oflighting.Mostruralareashada lowproportion ofitsdwellersusing public power,exceptforIwajowaLGAwhere47.7%ofruraldwellersusethepublic power supply.

Regardlessofthe locality,alltheLGAs reporteda higherproportionofdwellers hadnotoilet facility inthehousehold.Thesevaluesrangefrom48.1%inurbanAtibaLGAto97.9%in ruralAtibaLGA.RuralresidentsinAtibaLGAhadnopitlatrine(0%)andonly veryfew (2.1%) hada watercloset in the household.

Ahighproportionoftherespondentsrespondedtonothaving any formofrefuse management.ThistrendisthesameinalltheLGAs,regardlessofthelocality.Ruralresidents of AtibaLGA, for instance,had99% of themwithnorefuse managementscheme, whichis similar to that ofIwajowa(92.0%)andIbarapa (98.6), all in the same localities (Rural).

Table 4.4: Householdcharacteristics of respondents

Variable	Atiba		Ibarapa		Iwajowa		Combinedsample	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n n (%)
Total household category								
≤ 6	52(50.5)	60(63.2)	113(88.3)	58(78.4)	79(80.6)	77(80.6)	244(74.2)	195(76.2)
>6	51(49.5)	35(36.8)	15(11.7)	16(21.6)	19(19.4)	10(11.5)	85(25.8)	61(23.8)
House ownership								
No	61(58.7)	23(27.7)	35(30.4)	22(34.9)	14(14.3)	5(6.2)	110(34.7)	50(22.0)
Yes	43(41.3)	60(72.3)	80(69.6)	41(65.1)	84(85.7)	76(93.8)	207(65.3)	177(78.0)
Type of house								
A room	15(15.8)	22(23.7)	33(25.8)	18(25.0)	11(11.0)	2(2.3)	59(18.3)	42(16.7)
Self-contained	33(34.7)	22(23.7)	28(21.9)	17(23.6)	21(21.0)	6(7.0)	82(25.4)	45(17.9)
Flat with bedrooms	47(49.5)	16(17.2)	16(12.5)	9(12.5)	11(11.0)	27(31.4)	74(22.9)	52(20.7)
Others (e.g. face Me	0(0.0)	33(35.5)	51(39.8)	28(38.9)	11(11.0)	27(31.4)	108(33.4)	112(44.6)
Building materials								
Wood	2(1.9)	4(4.3)	0(0.0)	2(2.7)	0(0.0)	0(0.0)		
Mud	22(21.2)	82(87.2)	66(51.6)	64(86.5)	66(66.0)	67(77.0)		
Concrete block	77(74.0)	8(8.5)	41(32.0)	8(10.8)	22(22.0)	20(23.0)		
Others	3(2.9)	0(0.0)	21(16.4)	0(0.0)	12(12.0)	0(0.0)		
Flooring materials								
None	3(2.9)	59(62.1)	5(4.1)	34(46.6)	7(7.0)	2(2.3)		
Wood	7(6.7)	1(1.1)	0(0.0)	1(1.4)	2(2.0)	5(5.8)		
Concrete	80(76.9)	34(35.8)	117(95.1)	38(52.1)	91(91.0)	79(91.9)		
Tiles	12(11.5)	0(0.0)	1(0.8)	0(0.0)	0(0.0)	0(0.0)		
Terrazzo	2(1.9)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)		
Others	0(0.0)	1(1.1)	0(0.0)	0(0.0)	0(0.0)	0(0.0)		
Roofing materials								
Thatched roof	2(1.9)	4.4.3)	0(0.0)	0(0.0)	0(0.0)	0(0.0)		
Ironsheets	67(64.4)	84(91.3)	126(98.4)	74(100.0)	99(99.0)	87(100.0)		
Aluminium/ corrugated sheets	31(29.8)	4(4.3)	2(1.6)	0(0.0)	1(1.0)	0(0.0)		
Concrete	2(1.9)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)		
Others	2(1.9)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)		

Table 4.4: Householdcharacteristics ofrespondents(continued)

Variable	Atiba		Ibarapa		Iwajowa		Combined sample	
	Urban n (%)	Rural n (%)	Urban n (%)	Rural n (%)	Urban n (%)	Rural n (%)	Urban n (%)	Rural n (%)
Mainsource of drinking water								
Surface water	4(3.8)	45(47.4)	5(3.9)	13(17.6)	9(9.0)	4(4.6)	82(24.7)	68(26.6)
Well	37(35.6)	16(16.8)	22(17.2)	1(1.4)	42(42.0)	15(17.2)	101(30.4)	32(12.5)
Borehole	45(43.3)	34(35.8)	37(28.9)	60(81.1)	10(10.0)	54(62.1)	92(27.7)	148(57.8)
Others	18(17.3)	0(0.0)	19(14.8)	0(0.0)	20(20.0)	8(9.2)	57(17.2)	8(3.1)
Mainsource of cooking fuel								
Wood	19(18.3)	88(91.7)	26(20.8)	66(89.2)	40(40.8)	56(65.1)	85(26.0)	210(82.0)
Charcoal	18(17.3)	4(4.2)	29(23.2)	2(2.7)	42(42.9)	14(16.3)	89(27.2)	20(7.8)
Kerosene	61(58.7)	2(2.1)	69(55.2)	6(8.1)	16(16.3)	16(18.6)	146(44.6)	24(9.4)
Others	0(0.0)	2(2.1)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	7(2.1)	2(0.8)
Mainsource oflighting								
None	0(0.0)	16(16.7)	1(0.8)	0(0.0)	0(0.0)	1(1.2)	1(0.3)	17(6.6)
Candle/ Lantern	28(26.9)	55(57.3)	36(28.1)	35(47.3)	47(47.5)	40(46.5)	111(33.5)	130(50.8)
Publicpower (e.g. PHCN)	72(69.2)	0(0.0)	70(54.7)	4(5.4)	40(40.4)	41(47.7)	182(55.0)	45(17.6)
Alternative sources (generators, solar inverters etc)	4(3.8)	25(26.0)	21(16.4)	35(47.3)	12(12.1)	4(4.7)	37(11.2)	64(25.0)
Toilet facility in household								
None(e.g. open bush, surface water)	50(48.1)	94(97.9)	99(77.3)	72(97.3)	78(78.0)	80(92.0)	227(68.4)	246(95.7)
Pit latrine	20(19.2)	0(0.0)	20(15.6)	2(2.7)	21(21.0)	6(6.9)	61(18.4)	8(3.1)
Watercloset	34(32.7)	2(2.1)	9(7.0)	0(0.0)	1(1.0)	1(1.1)	44(13.3)	3(1.2)
Refuse management								
	75(72.1)	95(99.0)	124(96.9)	73(98.6)	99(99.0)	80(92.0)	298(89.8)	248(96.5)
Burning	11(10.6)	0(0.0)	1(0.8)	1(1.4)	0(0.0)	1(1.1)	14(4.2)	5(1.9)
Cityservices	16(15.4)	0(0.0)	3(2.3)	0(0.0)	1(1.0)	4(4.6)	20(6.0)	4(1.6)

4.5: Association betweensocio-demographic characteristics andLGAofrespondents

Table4.5showstheassociationbetweenLGAsandSocio-demographicfactors.Sex,age, maritalstatus,typeofmarriage,occupation,numberofwivesandreligionaresomevariables that weresignificantlyassociated with thelocalgovernment ofthe residenceof therespondents. TheassociationbetweenethnicityandtheLGAoftherespondentswas,however,not significant.

The proportionof femaleswasmore inalltheLGAs,exceptfor Atibawhichhadmore male (54.0%)thanfemale(46%).Mostrespondentswereaged50-70years,only AtibaLGA reportedahigherproportioninthoselessthan50yearsold.ThemajorethnicgroupisYoruba. Married respondents weremorethan other maritalgroupsacrossalltheLGAs.

MonogamyisthemainmarriagetypepractisedinAtibaLGA(89.4%),whileIbarapa(55.6) andIwajowa(55.7%)practisespolygamy/polyandry.Inallthe LGAs,theproportionthathad noeducationwerehigherthanthosewithprimary,Secondary orhigherlevelofeducation. More peoplewereintotrade/businessasanoccupationinall theLGAs.There were more Muslimsthanother religiousgroupsinAtiba(64.8%)andIwajowa(60.7%).IbarapaLGA had moreChristians (73.0%) than otherreligious groups.

Table 4.5: Associationbetweensocio-demographic characteristics and LGA ofrespondents

Variable	Ibarapa		Iwajowa	Chi-square	P
	Atiba				
	n (%)	n (%)	n (%)		
Sex					
Male	108(54.0)	69(34.2)	73(39.0)	17.50	<0.001
Female	92(46.0)	133(65.8)	114(61.0)		
Age group					
<50 years	96(48.0)	29(14.4)	6(3.2)	132.66	<0.001
50 –70	73(36.5)	113(55.9)	97(51.9)		
>70 years	31(15.5)	60(29.7)	84(44.9)		
Ethnicity					
Yoruba	197(98.5)	199(99.0)	187(100.0)	5.78	0.45
Igbo	1(0.5)	0(0.0)	0(0.0)		
Hausa	1(0.5)	0(0.0)	0(0.0)		
Others	1(0.5)	2(1.0)	0(0.0)		
Maritalstatus					
Married	177(89.4)	144(71.3)	118(63.1)	40.33	<0.001
Divorced/separated	0(0.0)	13(6.4)	13(7.0)		
Widow	21(10.6)	45(22.3)	56(29.9)		
Type of marriage					
Monogamy	125(63.1)	88(44.4)	81(44.3)	18.38	<0.001
Polygamy/polyandry	73(36.9)	110(55.6)	102(55.7)		
Wives group					
1	112(71.8)	89(58.9)	67(52.3)	14.32	0.01
2	33(21.2)	38(25.2)	37(28.9)		
>2	11(7.1)	24(15.9)	24(18.8)		
Education category					
None	97(48.7)	127(64.8)	142(77.2)	64.82	<0.001
Primary	41(20.6)	42(21.4)	34(18.5)		
Secondary	28(14.1)	22(11.2)	4(2.2)		
Tertiary	33(16.6)	5(2.6)	4(2.2)		
Occupation category					
None	2(1.0)	16(8.0)	25(13.4)	39.26	<0.001
Trade/business	99(50.0)	97(48.5)	94(50.5)		
Farmers	54(27.3)	60(30.0)	47(25.3)		
Civilservants	16(8.1)	3(1.5)	2(1.1)		
Artisans	27(13.6)	24(12.0)	18(9.7)		
Religion category					
Christian	64(32.2)	143(73.0)	70(38.3)	79.23	<0.001
Islam	129(64.8)	53(27.0)	111(60.7)		
Others	6(3.0)	0(0.0)	2(1.1)		

4.6 Association betweensocio-economiccharacteristics andLGA ofrespondents

TheassociationbetweensocioeconomicvariablesandtheLGAoftherespondents isshowninTable 4.6.The associationbetween allthe socio-economic variables andtheLGAofrespondentsweresignificant.MoreoftherespondentsinIwajowa LGA (77.0%)earnedlessthan₦10,000 thanrespondentsfromAtibaLGA (37.9%)andIbarapaLGA(62.4%),thisassociationissignificant($p<0.001$).Those thatearnedbetween₦10,000and₦49,000 weremoreinAtibaLGA(49.5%) thanIbarapa(34.5%)and Iwajowa(21.4%).Theassociationbetween House ownershipandLGA of Residentswassignificant($p<0.001$).IwajowaLGA had the highestproportionofitsresidentswithpersonalhouses(89.4%) thanIbarapa (68.0%) and AtibaLGA(55.1%). Ahigher proportion ofrespondents usedwood as the main sourceof cookingfuel in Atiba(53.5%) thanIbarapa(46.2%).

Table 4.6 Associationbetweensocio-economiccharacteristics andLGA ofrespondents

Variable n (%) n (%) n (%)	Atiba	Ibarapa	Iwajowa	Chi-	P
Income category					
<10,000	75(37.9)	123(62.4)	144(77.0)	71.25	<0.001
10,000– 49,000	98(49.5)	68(34.5)	40(21.4)		
>/=50,000	25(12.6)	6(3.0)	3(1.6)		
Totalhousehold category					
</=6	112(56.6)	171(84.7)	156(84.3)	54.57	<0.001
>6	86(43.4)	31(15.3)	29(15.7)		
House ownership					
No	84(44.9)	57(32.0)	19(10.6)	52.71	<0.001
Yes	103(55.1)	121(68.0)	160(89.4)		
Type ofhousecategory					
A room	37(19.7)	51(25.5)	13(7.0)	88.58	<0.001
Self-contained	55(29.3)	45(22.5)	27(14.5)		
Flatwithbedrooms	63(33.5)	25(12.5)	38(20.4)		
Others (e.g. facemeIfaceyou)	33(17.6)	79(36.5)	108(58.1)		
Mainsource drinkingwatercategory					
Surface/rain water	49(24.6)	63(31.2)	38(20.3)	30.83	<0.001
Well	53(26.6)	23(11.4)	57(30.5)		
Borehole	79(39.7)	97(48.0)	64(34.2)		
Others	18(9.0)	19(9.4)	28(15.0)		
The mainsource ofcookingfuelcategory					
Wood	107(53.5)	92(46.2)	96(52.2)	48.24	<0.001
Charcoal	22(11.0)	31(15.6)	56(30.4)		
Kerosene	63(31.5)	75(37.7)	32(17.4)		
Others	8(4.0)	1(0.5)	0(0.0)		
The mainsource oflighting category					
None	16(8.0)	1(0.5)	1(0.5)	50.96	<0.001
Candle/lantern	83(41.5)	71(35.1)	87(47.0)		
Public power supply(e.g.PHCH)	72(36.0)	74(36.6)	81(43.8)		
Alternative sources (e.g. solar, generator)	29(14.5)	56(27.7)	16(8.6)		
Toiletfacilityin household					
None (e.g. open bush, surfacewater	144(72.0)	171(84.7)	158(84.5)	43.91	<0.001
Pitlatrine	20(10.0)	22(10.9)	27(14.4)		
Watercloset	36(18.0)	9(4.5)	2(1.1)		
Refusemanagementin the household					
None	170(85.0)	197(97.5)	179(95.7)	27.24	<0.001
Burning	14(7.0)	2(1.0)	3(1.6)		
Cityservice	16(8.0)	3(1.5)	5(2.7)		

4.7 Association betweensocio-demographic variables andlocality ofrespondents

Table4.7 shows the association between the localityof therespondents and some socio-demographic variables. While those of sex($p<0.05$),Type of marriage ($p<0.05$),number of wives($p<0.05$),educationallevel($p<0.05$),occupation ($p<0.05$),andReligion($p<0.05$)weresignificant,thoseofageandethnicity were notsignificantly associated.UrbanrespondentspractisedPolyandry (57.8%)asa formof marriage morethan rural respondents(38.2%).Ina similar way,the proportionofmaleresidinginruralareas(48.6%)wasmorethanthoseresidingin urban areas(37.7%). The proportionwithnoeducationlivinginruralareas (66.9%) was morethan thoseresidingin urban areas (60.4%).

Table 4.7 Association betweensocio-demographic variables andlocality ofrespondents

Variable n(%)	Urban n(%)	Rural square	Chi	P
Sex				
Male	125(37.7)	125(48.6)	7.16	0.01
Female	207(63.3)	132(51.4)		
Agegroup				
<50 years	79(23.8)	52(20.2)	1.13	0.57
50 -70 years	155(46.7)	128(49.8)		
>70 years	98(29.5)	77(30.0)		
Ethnicity				
Yoruba	330(99.7)	253(98.4)	5.95	0.11
Igbo	0(0.0)	1(0.4)		
Hausa	1(0.3)	0(0.0)		
Others	0(0.0)	3(1.2)		
Typeofmarriage				
Monogamy	137(42.2)	157(61.8)	22.04	<0.001
Polygamy/polyandry	188(57.8)	97(38.2)		
Wives group				
1	113(53.6)	155(69.2)	14.27	<0.001
2	58(27.5)	50(22.3)		
>2	40(19.0)	19(8.5)		
Education category				
None	198(60.4)	168(66.9)	20.01	<0.001
Primary	58(17.7)	59(23.5)		
Secondary	36(11.0)	18(7.2)		
Tertiary	36(11.0)	6(2.4)		
Occupation category				
None	27(8.2)	16(6.3)	53.01	<0.001
Trade/business	188(57.3)	102(39.8)		
Farmers	53(16.2)	108(42.2)		
Civil servants	18(5.5)	3(1.2)		
Artisans	42(12.8)	27(10.5)		
Religioncategory				
Christian	129(39.7)	148(58.5)	21.83	<0.001
Islam	189(58.2)	104(41.1)		
Others	7(2.2)	1(0.4)		

4.8 Association betweensocio-economic variables andlocality ofrespondents

Theassociationbetweenthelocality oftherespondentsandsomesocioeconomicvariables are showninTable4.8.Houseownership($p<0.001$),typeofhouse($p<0.05$),mainsourceof drinkingwater($p<0.001$),mainsourceofcooking fuel($p<0.001$),mainsourceoflighting ($p<0.001$),toiletfacility ($p<0.001$),income($p<0.05$),andrefusemanagementinhousehold ($p<0.05$),wereallsignificantly relatedtotheirlocalgovernmentofresidence.Thetotal householdsizewas,however,notrelatedtothelocality oftherespondents.Theproportion withthe householdsizeof atleast6membersthatdwelledinruralareas(76.2%) wasmore than thosethat dwellin urban areas (74.2%).

Table 4.8:Associationbetweensocio-economicvariables andlocality of respondents

Variable	Urban n(%)	Rural n(%)	Chi square	P
Income category				
<10,000	186(56.5)	156(61.7)	6.15	0.05
10,000 – 49,000	117(35.6)	89(35.2)		
>/=50,000	26(7.9)	8(3.2)		
Total householdcategory				
</=6	244(74.2)	195(76.2)	0.31	0.58
>6	85(25.8)	61(23.8)		
Houseownership				
No	110(34.7)	50(22.0)	10.23	<0.001
Yes	207(65.3)	177(78.0)		
Typeof house category				
a room	59(18.3)	42(16.7)	8.66	0.03
Self-contained	82(25.4)	45(17.9)		
Flat with bedrooms	74(22.9)	52(20.7)		
Others(e.g. facemeI face you)	108(33.4)	112(44.6)		
The mainsource of drinking water category				
Surface/rain water	82(24.7)	68(26.6)	78.60	<0.001
Well	101(30.4)	32(12.5)		
Borehole	92(27.7)	148(57.8)		
Others	57(17.2)	8(3.1)		
The mainsourceofcookingfuel				
Wood	85(26.0)	210(82.0)	181.01	<0.001
Charcoal	89(27.2)	20(7.8)		
Kerosene	146(44.6)	24(9.4)		
Others	7(2.1)	2(0.8)		
The mainsourceoflightingcategory	1(0.3)	17(6.6)	97.63	<0.001
Candle/lantern	111(33.5)	130(50.8)		
Publicpower supply	182(55.0)	45(17.6)		
Alternative sources (e.g. solar, generator, inverters)	37(11.2)	64(25.0)		
Toilet facility inhousehold				
None(e.g. open bush, surfacewater,	227(68.4)	246(95.7)	68.81	<0.001
Pit latrine	61(18.4)	8(3.1)		
Watercloset	44(13.3)	3(1.2)		
Refusemanagement in the household				
None	298(89.8)	248(96.5)	10.12	0.01
Burning	14(4.2)	5(1.9)		
Cityservice	20(6.0)	4(1.6)		

Specific Objective4

Todeterminetheeffectofchangingfoodcultureandhabitson Healthrelatedquality oflife of adults in Oyo State

4.9 Frequency ofconsumption ofroots, tubers,and products

Thefrequencyofconsumptionofdifferentroots,tubers,andtheirproductsisgiveninTable4.9.Majority oftherespondentsdidnotconsume*gari*(39.6%),*lafun*(32.1%)and*fufu* (49.1%)at all. Morepeople (20.7%) responded toeatingroastedyamtwiceweeklythan any other time. While 38.7%of respondentsconsumedyamflour once daily,18.5% consumed poundedyamoncedaily.Foryamporridge andfriedyam,30.2%and 31.4%rarelyconsume them respectively. Asimilar foodconsumption pattern wasobserved in Cocoyam, Cocoyam fried, Sweetpotatoescookedandsweetpotatoesfried,wheremore proportionofthe respondents reported notconsumingitat all.

Table 4.9:Frequency ofconsumption ofroots, tuber, andproducts

Food description	No n (%)	Rarely n (%)	D1ce n (%)	D3ce n (%)	W1ce n (%)	W2ce n (%)	W3ce n (%)	M2ce n (%)	M3ce n (%)
Gari	233(39.6)	172(29.2)	18(3.1)	9(1.3)	81(13.8)	36(6.1)	13(2.2)	21(3.6)	7(1.2)
Lafun	189(32.1)	64(10.8)	172(29.2)	39(6.6)	38(6.5)	35(5.9)	42(7.1)	7(1.2)	3(0.5)
Fufu	289(49.1)	169(28.7)	21(3.6)	3(0.5)	61(10.4)	19(3.2)	10(1.7)	14(2.4)	3(0.5)
Yam roasted	31(5.3)	99(16.8)	108(18.3)	17(2.9)	107(18.2)	122(20.7)	86(14.6)	14(2.4)	5(0.8)
Yam flour	45(7.6)	88(15.0)	228(38.7)	36(6.1)	47(8.0)	62(10.5)	71(12.1)	6(1.0)	6(1.0)
Pounded yam	62(10.5)	101(22.3)	109(18.5)	15(2.6)	97(16.5)	86(14.6)	52(8.8)	28(4.8)	9(1.5)
Yam porridge	189(32.1)	220(37.3)	22(3.7)	6(1.0)	75(12.7)	36(6.1)	17(2.9)	18(3.1)	6(1.0)
Yam fried	221(37.5)	219(37.2)	23(3.9)	3(0.5)	60(10.2)	25(4.2)	15(2.5)	19(3.2)	4(0.7)
Cocoyam	372(63.2)	156(26.5)	9(1.5)	3(0.5)	25(4.2)	10(1.7)	4(0.7)	8(1.47)	2(0.3)
Cocoyam fried	427(72.5)	125(21.2)	7(1.2)	2(0.3)	17(2.9)	3(0.5)	1(0.2)	5(0.8)	2(0.3)
Sweet potatoes cooked	369(62.6)	160(27.2)	7(1.2)	1(0.2)	26(4.4)	10(1.7)	4(0.7)	9(1.5)	3(0.5)
Sweet potatofried	430(73.0)	118(20.0)	8(1.4)	0(0.0)	18(3.1)	5(0.8)	4(0.7)	6(1.0)	0(0.0)

D1ce-oncedaily,**D3ce**-thricedaily,**W1ce**-onceweekly,**W2ce**-twiceweekly,**W3ce**-thrice
weekly, **M1ce**-oncemonthly, and**M3ce**-thricemonthly

4.10 Frequency ofconsumption ofcereals, legumes,and products

Thefrequencyofconsumptionofdifferentmaizefooditemsis giveninTable4.10.Majority oftherespondents(69.6%)tookogi/pap/kokooncedaily,whileonly 2.7%didnottakeitat all. Similarly,for Eko agidi,6.1% didnotconsume itatall,51.6% ateitonce daily.Tuwo masara,Kokoro,SapalaAbariandIrowasnottakenatallby mostoftherespondents.The proportionthatreportednottakingthesefooditemsatallwas,47.4%,68.1%,64.3%,and 94.2%,respectively.CookedMaizewasrarelyconsumedby 36.2%oftherespondents. Guguru(Popcorn)wasconsumedonceweeklyby 8.1%oftherespondents,while44.0%did not consumeitat all.

Thefrequency ofconsumptionofvariousRicefooditemsisalsoshown.Amongthosewho consumedwhiterice,19.9%didsoonce daily,asagainst4.8%whoateJollofricewiththe samefrequency.FriedRiceandTuwo-Shinkafawerenoteatenatallbyalargeproportionof therespondents.Theproportionreportedis78.6%and85.1%respectively.WhileWhite Rice wasconsumedthricedaily by1.4%oftherespondents,noneoftheotherfooditems(Jollof rice, Fried rice, and Tuwo-shinkafa)was eaten atallwith that frequency.

Differentbeans/cowpeasfooditemsandthefrequency oftheirconsumptionarealsoshown inTable4.9.Morepeopleatecookedbeansthriceweekly (23.8%),whileonly1.9%didnot take itatall. Similarly, forMoinmoin,24.1%ateitonce daily.Akaraikoko,Ekuru,Gbegiri werenottakenatallbymostof therespondents.While23.8%tookcookedbeansthrice weekly, only20.2%tookmoinmoin with thesame frequency.

Table4.9alsoshowsthefrequencyofconsumptionofvariouswheatfooditemssuchaswhole wheatbread,whitebread,biscuit,wheatflourboiled,andconfectionaries.Alargepropo rtion of respondents did not takewheat products. Thefood items areWhole wheat

bread,Biscuit,
Wheatflourboiled,andConfectionaries,withthereportedproportionsbeing
91.5%,31.9%,
85.6%,and23.4%respectively.Also,BiscuitsandConfectionarieswereta kenrarelyby
35.5%and30.1%respectively. However,a sizeablenumberate White
breadeitheronce, twice
orthriceweekly,with18.0%,17.7%,13.8%beingtheproportions reported respectivel
y.

Table 4.10 Frequency ofconsumption ofcereals, legumes, andproducts

Food descripti	No	Rarely	D1ce	D3ce	W1ce	W2ce	W3ce	M1ce	M3ce
Ogi pap koko	16(2.7)	33(5.6)	410(69.6)	26(4.4)	25(4.2)	33(5.6)	39(6.6)	3(0.5)	4(0.6)
Eko agidi	36(6.1)	60(10.2)	304(51.6)	25(4.2)	42(7.1)	41(7.0)	59(10.0)	11(1.9)	11(1.9)
Tuwo masara	279(47.4)	147(25.0)	23(3.9)	6(1.0)	38(6.5)	22(3.7)	18(3.1)	35(5.9)	21(3.6)
Maize cooked	106(18.0)	213(36.2)	52(8.8)	7(1.1)	70(11.9)	48(8.1)	40(6.8)	23(3.9)	30(5.1)
Kokoro	401(68.1)	112(19.0)	14(2.4)	2(0.3)	28(4.8)	7(1.2)	4(0.7)	12(2.0)	9(1.5)
Sapala / abari	379(64.3)	138(23.4)	8(1.4)	1(0.2)	20(3.4)	6(1.0)	2(0.3)	26(4.4)	9(1.5)
Iro	555(94.2)	23(3.9)	2(0.3)	0(0.0)	3(0.5)	0(0.0)	3(0.5)	1(0.2)	2(0.4)
Guguru	259(44.0)	171(29.0)	20(3.4)	0(0.0)	48(8.1)	23(3.9)	13(2.2)	41(7.0)	14(2.4)
Whit e rice	35(5.9)	77(13.1)	117(19.9)	19(3.3)	88(14.9)	100(17.0)	105(17.8)	18(3.1)	30(5.1)
Jollof rice	229(38.9)	171(29.0)	28(4.8)	1(0.2)	58(9.8)	29(4.9)	20(3.4)	30(5.1)	23(3.9)
Fried rice	463(78.6)	89(15.1)	8(1.4)	0(0.0)	8(1.4)	1(0.2)	2(0.3)	13(2.2)	5(0.9)
Tuwo shinkafa	501(85.1)	55(9.3)	4(0.7)	0(0.0)	6(1.0)	7(1.2)	3(0.5)	6(1.0)	7(1.2)
Beans cooked	11(1.9)	61(10.4)	103(17.5)	25(4.2)	90(15.3)	118(20.0)	140(23.8)	17(2.9)	24(4.1)
Moinmoi n	20(3.4)	78(13.2)	142(24.1)	11(1.9)	77(13.1)	108(18.3)	119(20.2)	16(2.7)	18(3.1)
Akara	23(3.9)	78(13.2)	187(31.7)	16(2.7)	74(12.6)	93(15.8)	97(16.5)	11(1.9)	10(1.7)
Akar a	473(80.3)	78(13.2)	13(2.2)	2(0.4)	12(2.0)	1(0.2)	2(0.3)	6(1.0)	2(0.3)
ikoko	204(34.6)	138(23.4)	33(5.6)	12(2.0)	62(10.5)	51(8.7)	41(7.0)	24(4.1)	24(4.1)
Gbegiri	173(29.4)	137(23.3)	34(5.8)	12(2.0)	60(10.2)	45(7.6)	46(7.8)	46(7.8)	36(6.1)
Whol e wheat bread	539(91.5)	35(5.9)	4(0.7)	1(0.2)	0(0.0)	5(0.8)	1(0.2)	3(0.5)	1(0.2)
bread	53(9.0)	109(18.5)	53(9.0)	8(1.3)	106(18.0)	104(17.7)	81(13.8)	36(6.1)	39(6.6)
Biscuit	188(31.9)	209(35.5)	32(5.4)	5(0.9)	54(9.2)	25(4.2)	43(7.3)	13(2.2)	20(3.3)
Wheat flour boiled	504(85.6)	47(8.0)	7(1.2)	1(0.2)	7(1.2)	9(1.5)	6(1.0)	4(0.7)	4(0.7)
Confect onaries	138(23.4)	177(30.1)	44(7.5)	5(0.9)	72(12.2)	59(10.0)	51(8.7)	17(2.9)	26(4.4)

D1ce-oncedaily,**D2ce**-twicedaily,**D3ce**-thricedaily,**W1ce**-onceweekly,**W2ce**-twiceweekly,

W3ce-thriceweekly,**M1ce**-oncemonthly,**M2ce**-twicemonthly, and**M3ce**-thricemonthl

4.11 Frequency ofconsumptionofmeat andallied products

Thefrequencyof consumptionofmeatand alliedproductsfooditemsis giveninTable4.11.

Beefandfishweretakenoncedaily,bymostofthosewhoconsumedthem(19.7%and39.2%

respectively).However,chicken,egg,andtinnedmilkwereconsumedrarelybymorepeople.

Theproportionofrespondentswhotooktheseproductsrarelywas,28.5%,20.2%,and19.5% respectively.

Table 4.11 Frequency ofconsumptionofmeat andallied products

Food description	No	Rarely	D1ce	D3ce	W1ce	W2ce	W3ce	M1ce	M3ce
Beef	70(11.9)	93(15.8)	116(19.7)	42(7.1)	63(10.7)	66(11.2)	70(11.9)	42(7.1)	27(4.6)
Chicken	137(23.3)	168(28.5)	57(9.7)	6(1.0)	50(8.5)	30(5.1)	35(5.9)	78(13.2)	28(4.7)
Fish	15(2.5)	43(7.3)	231(39.2)	56(9.6)	50(8.5)	62(10.5)	118(20.0)	5(0.8)	9(1.5)
Egg	72(12.2)	119(20.2)	80(13.6)	13(2.2)	94(16.0)	87(14.8)	77(13.1)	19(3.2)	28(4.7)
Fresh milk	437(74.2)	101(17.1)	8(1.4)	3(0.5)	11(1.9)	7(1.2)	4(0.7)	13(2.2)	5(0.8)
Tinnedmilk	75(12.7)	115(19.5)	37(6.3)	5(0.8)	95(16.1)	99(16.8)	69(11.7)	50(8.5)	44(7.4)
Cheese	131(22.2)	121(20.5)	32(5.4)	5(0.8)	92(15.6)	70(11.9)	53(9.0)	44(7.5)	41(7.0)
Yoghurt	478(81.2)	68(11.5)	9(1.5)	2(0.3)	5(0.8)	6(1.0)	3(0.5)	12(2.0)	6(1.0)
Others	27(4.6)	2(0.3)	3(0.5)	1(0.2)	0(0.0)	2(0.3)	2(0.3)	0(0.0)	0(0.0)

D1ce-oncedaily,**D3ce**-thricedaily,**W1ce**-onceweekly,**W2ce**-twiceweekly,**W3ce**-thriceweekly,
M1ce-oncemonthly, and**M3ce**-thricemonthly

4.12 Frequency ofconsumptionofbeverages andotherdrinks

Thefrequency ofconsumptionoftea,beveragesandotherdrinksispresentedinTable4.12. Coffeewasnotconsumedatallbymostrespondents(91.0%),while21.2%and24.4%rarely tookbeveragesorLiptontea respectively.However, 18.7% consumedbeveragestwice weekly whileonly 15.3%consumeditonceweekly.Morepeopletookbeverages(18.7%) thanLipton tea(10.5%) twiceweekly.

Table4.11alsoshowsthefrequencyofconsumptionofsomedrinks. The majority (82.0%)of therespondentsdidnottakealcoholicdrinks,whileonly2.7%tookitoncedaily.Carbonated drinkswererarely takenby 35.7%while20.5%didnottakethematall.Similarly,37.7% consumedmalteddrinksrarelyand25.8%didnotconsumeitatall.Juiceswerenotconsumed at all by56.7%of therespondents and only32.6%consumed itrarely.

Table 4.12 Frequency ofconsumption ofbeverages andotherdrinks

Food description	No	Rarely	D1ce	D3ce	W1ce	W2ce	W3ce	M1ce	M3ce
Tea lipton	129(21.9)	144(24.4)	36(6.1)	3(0.5)	90(15.3)	62(10.5)	44(7.5)	49(8.3)	32(5.4)
Beverages	52(8.8)	125(21.2)	55(9.3)	7(1.2)	85(14.4)	110(18.7)	70(11.9)	39(6.6)	46(7.8)
Coffee	536(91.0)	38(6.5)	3(0.5)	2(0.3)	6(1.0)	0(0.0)	0(0.0)	2(0.3)	0(0.0)
Carbonated drinks	121(20.5)	210(35.7)	15(2.5)	5(0.8)	80(13.6)	41(7.0)	21(3.6)	63(10.7)	33(5.6)
Malted drinks	152(25.8)	222(37.7)	11(1.9)	3(0.5)	72(12.2)	21(3.6)	14(2.4)	61(10.4)	33(5.6)
Alcohol icdrinks	483(82.0)	32(5.4)	16(2.7)	3(0.5)	16(2.7)	10(1.7)	12(2.0)	11(1.9)	6(1.0)
Juices	334(56.7)	192(32.6)	9(1.5)	2(0.3)	13(2.2)	6(1.0)	3(0.5)	24(4.1)	6(1.0)

D1ce-oncedaily,**D3ce**-thricedaily,**W1ce**-onceweekly,**W2ce**-twiceweekly,**W3ce**-thriceweekly,

M1ce-oncemonthly, and**M3ce**-thricemonthly

4.13 Frequency ofconsumptionoffruits andvegetables

Table4.13showsthefrequency ofconsumptionofsomefruits.Morepeopletakeabanana (21.6%) thanPlantain(18.3%) orpawpaw (16.3%) once weekly.21.1%consumedcitrus fruitsoncedaily.Mostoftherespondentsrarelyconsumedmango(45.8%),Pawpaw(33.1%), Pineapple (37.2%), Cashew (42.4%),andplantain(22.4%). Otherfruitslike Guava, Watermelon,Apple,Pear,andCarrotwerenotconsumedatall by mostoftherespondents.

ThefrequencyofconsumptionofvegetablesisalsopresentedinTable4.12.Vegetables were classifiedintoleafyandnon-leafyvegetables. Leafyvegetableswereconsumedoncedailyby mostofthe respondents(31.2%),whilemore people(28.4%)didnotconsume non-leafy vegetablesatall.However,20.2%oftherespondentsand14.8%consumedleafy vegetables and non-leafyvegetablesthriceweeklyrespectively.

Table 4.13 Frequency ofconsumptionoffruits andvegetables

Food description	No	Rarely	D1ce	D3ce	W1ce	W2ce	W3ce	M1ce	M3ce
Citrus fruits	30(5.1)	107(18.2)	124(21.1)	26(4.5)	70(11.9)	88(14.9)	96(16.3)	13(2.2)	35(6.0)
Mango	222(37.7)	270(45.8)	25(4.2)	3(0.5)	27(4.6)	15(2.5)	10(1.7)	10(1.7)	7(1.1)
Pawpaw	56(9.5)	195(33.1)	42(7.1)	6(1.0)	96(16.3)	94(16.0)	54(9.2)	21(3.6)	25(4.2)
Guava	311(52.8)	179(30.4)	15(2.5)	1(0.2)	32(5.4)	16(2.7)	5(0.8)	18(3.1)	12(2.1)
Pineapple	158(26.8)	219(37.2)	15(2.5)	4(0.7)	70(11.9	27(4.6)	12(2.0)	48(8.1)	36(6.1)
Water melon	194(32.9)	184(31.2)	23(3.9)	5(0.8)	58(9.8)	34(5.8)	27(4.6)	31(5.3)	33(5.6)
Cashew	172(29.2)	250(42.4)	29(4.9)	5(0.8)	42(7.1)	21(3.6)	23(3.9)	28(4.8)	19(3.3)
Apple	299(50.8)	167(28.4)	20(3.4)	3(0.5)	39(6.6)	19(3.2)	4(0.7)	23(3.9)	15(2.5)
Pear	485(82.3)	75(2.7)	6(1.0)	1(0.2)	10(1.7)	3(0.5)	2(0.3)	6(1.0)	1(0.2)
Carrot	237(40.2)	213(36.2)	11(1.9)	1(0.2)	34(5.8)	15(2.5)	10(1.7)	39(6.6)	29(5.0)
Banana	32(5.4)	124(21.1)	30(5.1)	8(1.3)	127(21.6)	115(19.5)	79(13.4)	32(5.4)	42(7.1)
Plantain	66(11.2)	132(22.4)	29(4.9)	4(0.6)	108(18.3)	95(16.1)	72(12.2)	41(7.0)	42(7.1)
Leafy vegetables	15(2.5)	52(8.8)	184(31.2)	60(10.2)	53(9.0)	91(15.4)	119(20.2)	4(0.7)	11(1.9)
Non leafy vegetables	167(28.4)	89(15.1)	52(8.8)	15(2.5)	75(12.7)	75(12.7)	87(14.8)	12(2.0)	17(2.9)

D1ce-oncedaily,**D3ce**-thricedaily,**W1ce**-onceweekly,**W2ce**-twice weekly,**W3ce**-thriceweekly,**M1ce**-oncemonthly, and**M3ce**-thricemonthly

4.14 Frequency ofconsumptionofoil andseed nuts

Differentoilandseednutsandthefrequency oftheirconsumptionisshowninTable4.14. Majority oftherespondentsdidnottakecashewnutandoilpalmnut.Theproportionsof peoplethatdidnot takeitat allare respectively 66.9%and76.9%.Peanuts(26.7%)and coconuts(34.6%)weretakenrarely bymostoftherespondents.CoconutandPeanutswere taken onceweeklyby11.9% and 16.1% of the respondents respectively.

Table 4.14 Frequency of consumption of oil andseed nuts

Food description	No	Rarely	D1ce	D3ce	W1ce	W2ce	W3ce	M1ce	M3ce
Peanuts	96(16.3)	157(26.7)	55(9.3)	7(1.2)	95(16.1)	70(11.9)	65(11.0)	22(3.7)	8(3.7)
Cashew nut	394(66.9)	135(22.9)	12(2.0)	3(0.5)	10(1.7)	9(1.5)	8(1.4)	11(1.9)	7(1.2)
Oilpalmnut	453(76.9)	92(15.6)	9(1.5)	3(0.5)	10(1.7)	7(1.2)	3(0.5)	10(1.7)	2(0.3)
Coconut	121(20.5)	204(34.6)	13(2.2)	3(0.5)	70(11.9)	35(5.9)	20(3.4)	79(13.4)	44(7.5)
Refined oil	27(4.6)	2(0.3)	1(0.2)	0(0.0)	0(0.0)	0(0.0)	1(0.2)	0(0.0)	1(0.2)

D1ce-oncedaily,**D3ce**-thricedaily,**W1ce**-onceweekly,**W2ce**-twiceweekly,**W3ce**-thrice weekly,**M1ce**-oncemonthly, and**M3ce**-thricemonthly.

4.15 Changing foodcultureofrespondents

Thechangingfoodcultureofrespondentsisshowninin Table4.15.As againstthepracticein thepast20-30yearsago,amajorityofrespondents(63.2%)eatthreesquaremeals.However, theregularity wasbetterinthepastthanpresent(50.3vs40.9).Mostrespondentsprepared their own mealsinthe past(94.5%) thanthe present(84.0%), justasa higher proportionused grindingstones in thepast (84.4%) than the present(54.8%).

Theproportionofrespondentswhotookbreakfastinthepastandpresentaresimilarand more peopletakeitbetween9amand10aminthepresent(22.8%)thaninthepast(19.1%).Als o, peopletakebrunchmoreinthepast(47.4%)thanpresently (39.0%).Presently,mostpeople takebrunchbetween11amand12noon (48.7%)thaninthepast(39.6%).Theregularity of taking dinneroftenhasimproved(50.4%)fromwhatwasobtainedin thepast(48.2%). Similarly,morepeopletakeafterlunchbetween4and5presently (54.7%)thaninthe past (50.8%).

Table 4.15a:Changingfoodcultureofrespondents

Culture	Past(inthelast20-30years)	Present
n (%) n (%)		
Howmany squaremealsdo you take perday?		
One	3(0.5)	4(0.7)
Two	26(4.4)	69(11.4)
Three	335(57.0)	383(63.2)
four or more	224(38.1)	150(24.8)
Howoften doyou take thesemeals?		
Rarely	8 (1.4)	13 (2.3)
Occasionally	18 (3.1)	69 (12.0)
Often	263(45.2)	258(44.9)
veryoften	293(50.3)	235 (40.9)
Do you normallytake breakfast?		
No	13(2.2)	15(2.5)
Yes	576(97.8)	574(97.5)
Whattime did you normallytake breakfast?		
before 7am	104(18.2)	87(15.2)
7 -9am	358(62.7)	354(62.0)
9 -10am	109(19.1)	130(22.8)
Howoften doyou normally take breakfast?		
Rarely	17(3.0)	15(2.6)
Occasionally	11(1.9)	38(6.7)
Often	280(49.1)	274(48.2)
veryoften	262(46.0)	242(42.5)
Do you takebrunch?		
No	310(52.6)	359(61.0)
Yes	279(47.4)	230(39.0)
Whattimedoyounormallytakebrunchinthe morning?		
between 10-11am	168(60.4)	115(51.3)
11 -12pm	110(39.6)	109(48.7)
Howoften doyou normally take brunch?		
Rarely	16(5.9)	25(10.9)
Occasionally	33(12.3)	56(24.5)
Often	153(56.9)	102(44.5)
veryoften	67(24.9)	46(20.1)
Do you takelunch?		
No	15(2.5)	23(3.9)
Yes	574(97.5)	566(96.1)
Whattime doyou normally take lunch?		
12pm	28(4.9)	28(5.0)
between 12-1pm	91(16.0)	67(11.9)
between 1 -2pm	234(41.3)	225(39.8)
between 2 -3pm	208(36.7)	236(41.8)
after3pm	6(1.1)	9(1.6)
Howoften doyou normally take lunch?		
Rarely	14(2.5)	21(3.8)
Occasionally	14(2.5)	40(7.2)
Often	258(46.6)	259(46.9)
veryoften	268(48.4)	232(42.0)

Table 4.15b:Changingfoodcultureofrespondents (Continued)

Culture n (%)	Past(inthelast20-30years) n (%)	Present
Do you takesnacks after lunch?		
No	389(66.0)	400(67.9)
Yes	200(34.0)	189(16.0)
Howoftendoyounormallytakesnacksafter lunch?		
Rarely	20(10.2)	22(11.8)
Occasionally	29(14.7)	54(29.0)
Often	96(48.7)	80(43.0)
veryoften	52(26.4	30(16.1)
Whattimedoyounormallytakesnacksafter lunch?		
4pm	52(26.9)	41(22.7)
between 4-5pm	98(50.8)	99(54.7)
between 5-6pm	43(22.3)	41(22.7)
Do you normallytake dinner?		
No	5(0.8)	9(1.5)
Yes	584(99.2)	580(98.5)
Howoften doyou normally take dinner?		
Rarely	14(2.4)	13(2.3)
Occasionally	10(1.7)	28(4.9)
Often	276(48.2)	286(50.4)
veryoften	273(47.6)	240(42.3)
Whattime doyou normally takedinner?		
6pm	17(2.9)	15(2.6)
between 6-8pm	227(39.2)	189(32.9)
between 8-10pm	304(52.5)	351(61.0)
after10pm	31(5.4)	20(3.5)
Howoften doyouprepare yourmeals?		
every meal	551(94.5)	475(82.0)
oncein a day	28(4.8)	94(16.2)
oncea week	4(0.7)	9(1.6)
Oncea month	0(0.0)	1(0.2)
Whattypeofcookingutensilsdoyouusein preparing your meals?		
LocalClay pots		
No	37(6.3)	
435(73.9)		
Yes	552(93.7)	
154(26.1)		
Localgrinding Stones		
No	92(15.6)	
266(45.2)		
Yes	497(84.4)	
323(54.8)		
Aluminiumpots		
No	546(92.7)	
33(5.6)		
Yes	43(7.3)	
556(94.4)		

Aluminiumplates and spoons		
No	509(86.4)	
97(16.5)		
Yes	80(13.6)	
492(83.5)		
GrindingMachines		
No	569(96.6)	205
(34.8)		
Yes	20(3.4)	384
(65.2)		
Others		
Yes	6(100)	
14(100)		

4.16. Changes incommonfoodofrespondents

ThechangingpatterninthecommonfoodofrespondentsshowninTable4.16showsasteady declineintheconsumptionoflegumes.Forinstance,beansare lesstakennow(95.8%)than inthepast(96.6%).Also,osasaisnoteatenpresently(26.7%)likeitwasinthepast(45.7%), justaspapondoislesstakennow(45.0%) than itwasinthe past(92.5%). Thispatternof steady declineisalsoseenintheconsumptionofvegetables.Eweduislessconsumednow (95.8%)thanbefore(98.3%),andthisis similartotheconsumption ofeweiroko,whichis less consumed now (67.4%) than in thepast (82.0%)

Cerealshavebecome commonfoodformostoftherespondents.Asagainstwhatobtainedin thepast(75.6%),peopleconsume rice more now(95.4%).Also,noodlesare eatenmore presently than20-30yearsback(75.6%).However,ekotutuislesseatennow(93.9%)than previously(97.8%)

Consumptionofmeatandfishshowsaninteresting pattern,asfoodslikebushmeatandejaodoshowedadecline,otherfoodslikesawaandtitusfish are moreconsumednowthanin the past.For instance,93% of the respondentstooktitusfishnow than inthe past(50.4%). Also, more(97.6%) tookbushmeat in the past thannow (76.2%).There'sasharpincreaseinthepatternofconsumingcondimentsnowthanpreviously.Maggi, forinstance,wasconsumedbyfewerpeople(21.4%)inthepastthanpresently(88.6%). This is similar to the consumptionof curry(75.0%vs 9.7%).

Table 4.16a: Changesincommonfoodofrespondents

Commonfood (In the last20-30 years)	Past		Presently (Now)	
	No n (%)	Yes n (%)	No n (%)	Yes n (%)
Cereals				
eko_tutu	13(2.2)	576 (97.8)	36(6.1)	553(93.9)
ogi_koko	11(1.9)	578(98.1)	19(3.2)	570(96.8)
Egbo	28(4.8)	561(95.2)	91(15.4)	498(84.6)
Noddles	573(97.3)	16(2.7)	144(24.4)	445(75.6)
Rice	144(24.4)	445(75.6)	27(4.6)	562(95.4)
Spaghetti	27(4.6)	562(95.4)	139(23.6)	450(76.4)
Macaroni	562(95.6)	26(4.4)	136(23.1)	453(76.9)
Legumes				
cooked_beans	20(3.4)	569(96.6)	25(4.2)	564(95.8)
Akara	9(1.5)	580(98.5)	25(4.2)	564(95.8)
Moinmoin	9(1.5)	580(98.5)	27(4.6)	562(95.4)
Iru	14(2.4)	575 (97.6)	29 (4.9)	560(95.1)
Otili	35(5.9)	554(94.1)	226(38.4)	363(61.6)
Popondo	44(7.5)	545(92.5)	324(55.0)	265(45.0)
gbomode_gungi	49(8.3)	540(91.7)	323(54.8)	266(45.2)
Osasa	320(54.3)	269(45.7)	432(73.3)	157(26.7)
Roots and Tubers				
roasted_yam	30(5.1)	559(94.9)	89(15.1)	500(84.9)
boiled_yam	9(1.5)	580(98.5)	17(2.9)	572(97.1)
pounded_yam	13(2.2)	576 (97.8)	22(3.7)	567(96.3)
amala_lafun	37(6.3)	552(93.7)	48(8.1)	541(91.9)
amala_dudu	13(2.2)	576 (97.8)	26(4.4)	563(95.6)
Semovita	535 (90.8)	54 (9.2)	87(14.8)	502(85.2)
Wheat	549(93.2)	40(6.8)	281(47.7)	308 (52.3)
amala_pupa	249(42.3)	340 (57.7)	355 (60.3)	234 (39.7)

Table 4.16b:Changes incommonFoodofRespondents(Continued)

Commonfood	Past(In the last20-30 years)		Presently(Now)	
	No	Yes	No	Yes
	n (%)	n (%)	n (%)	n (%)
Vegetables				
Ewedu	10(1.7)	579(98.3)	25(4.2)	564(95.8)
Ilasa	12(2.0)	577(98.0)	49(8.3)	540(91.7)
Morogbo	128(21.7)	461(78.3)	151 (25.6)	438 (74.4)
Gbure	27(4.6)	562(95.4)	54(9.2)	535(90.8)
egusi_osiki	7(1.2)	582(98.8)	24(4.1)	565(95.9)
efo_soko	7(1.2)	582(98.8)	24(4.1)	565(95.9)
efo_tete	9(1.5)	580(98.5)	50 (8.5)	539(91.5)
Ewuro	11(1.9)	578(98.1)	35(5.9)	554(94.1)
obe_ajara	150 (25.5)	439 (74.5)	202 (34.3)	387 (65.7)
Pekun	250(42.4)	339 (57.6)	277(47.0)	312(53.0)
Ogbo	224 (38.0)	365 (62.0)	235(39.9)	354 (60.1)
Ebolo	22(3.7)	567(96.3)	75(12.7)	514(87.3)
amunu_tutu	29 (4.9)	560 (95.1)	81(13.8)	508(86.2)
woro_wo	118(20.0)	471(80.0)	175 (29.7)	414 (70.3)
ata_ijosin	21(3.6)	568 (96.4)	122 (20.7)	467 (79.3)
ewe_iroko	106(18.0)	483 (82.0)	192 (32.6)	397 (67.4)
Ugwu	199 (33.8)	390 (66.2)	107 (18.2)	482 (81.8)
MeatandFishProducts				
bush meat	14(2.4)	575 (97.6)	140(23.8)	449 (76.2)
red_meat	20 (3.4)	569 (96.6)	48 (8.1)	541 (91.9)
eja_gbigbe	18 (3.1)	571 (96.9)	29 (4.9)	560 (95.1)
eja_odo	16 (2.7)	573 (97.3)	34(5.8)	555 (94.2)
Kote	326 (55.3)	263 (44.7)	41(7.0)	548 (93.0)
Sawa	299 (50.8)	290 (49.2)	39 (6.6)	550 (93.4)
Titus	292 (49.6)	297 (50.4)	41(7.0)	548 (93.0)
Condiments				
Ogiri	278 (47.2)	311 (52.8)	373 (63.3)	216 (36.7)
Curry	532 (90.3)	57 (9.7)	147(25.0)	442 (75.0)
Magi	463 (78.6)	126 (21.4)	67 (11.4)	522 (88.6)
Cashew	58 (9.8)	531 (90.2)	30 (5.1)	559 (94.9)
Oranges	17 (2.9)	572 (97.1)	22(3.7)	567 (96.3)
Pawpaw	16 (2.7)	573 (97.3)	24(4.1)	565 (95.9)
Apples	422 (71.6)	167 (28.4)	120(20.4)	469 (79.6)

4.17. Perceived causes ofchanging food patternandsocietal health impact

Generally,mostof therespondentsbelievedthatthere'sa change inthechemical/ organolepticpropertiesoffood(81.7%).Theyalsobelievethatthese changes areinthe form ofLownutritionalvalue(83.3%),poorshelflife (79.8%)anda poormethodofpreparation (78.2%),amongotherthings.Therespondentsalsopostulatedthatsome ofthesechanges couldbeasaresultofusingchemicallymodifiedseedsforplanting(78.1%),useofherbi cides (77.9%),useoforganicfertilizers(71.6%)andabsence/extinctionofwildly grown indigenous vegetables (73.0%), amongothers.

Someoftheimpactsofthesechangesidentifiedby therespondentsincludedecreasedlife expectancy (77.0%),increasedprevalenceofNCDs(74.5%),decreasedworkcapacity (75.2%), frequent illness(75.3%), andreduced physicalactivities (72.5%).

Table 4.17: Perceived causes ofchanging foodpatternandsocietal health impact

Yes n(%)	No n(%)
Doyouthinkthereis/arechemical/organoleptic properties offood	450(81.7)	101(18.3)
Likely Chemical /organoleptic change		
Poor taste	425(72.2)	119(21.9)
Low nutritionalValue	455(83.3)	91(16.7)
Poor shelflife	435(79.8)	110(20.2)
Poor method ofpreparation	420(78.2)	117(21.8)
Others	38(6.5)	88(14.9)
Likely causes of the Chemical /organoleptic change		
Useof Herbicides	447(77.9)	127(22.1)
Useof inorganicfertilizers	422(71.6)	153(26.0)
Poor land fertility	400(69.7)	174(30.3)
Useof processed inorganic feeds for animals	441(76.7)	134(23.3)
Changes in the processing method	446(77.4)	130(22.6)
Timefactor(decreased planting season)	415(72.4)	158(27.6)
Useof chemicallymodified seed for planting	450(78.1)	126(21.9)
Absence/extinction of wildly grown indigenous vegetables	414(73.0)	153(27.0)
Others	5(20.8)	19(79.2)
Likely impact ofthechanges in foodcultures on societal Health		
Decreased life expectancy	445(77.0)	133(22.6)
Increased prevalenceofNCDs	433(74.5)	148(25.5)
Decreased work capacity	443(75.2)	138(23.8)
Frequent illness	437(75.3)	143(24.7)
Reduced physical activities	420(72.5)	159(27.5)
Others_specify	32(51.6)	30(48.4)

4.18. Lifestylebehaviour(pattern) ofrespondents

TheLifestylepatternof the respondents(Table 4.18) showedthatlackofphysicalexercise wasthemostprevalentlifestylepatternamongtherespondentswith64.8%havingnophysical exerciseatall.Otheridentifiedlifestylepatternsare Smoking (3.6%),Alcoholuse(16.3%), Heartailment(18.1%)andDiabetes(1.2%).However,about28%oftherespondentsreported havingno health problem.

Table 4.18: Lifestyle behaviour(pattern) ofrespondents

Lifestyle n(%)	Yes n(%)	No
Smoking	21(3.6)	568(96.4)
Alcohol use	96(16.3)	493(83.7)
Physical exercise	205(35.2)	378(64.8)
Heart ailment	106 (18.1)	481(81.9)
Diabetes	7(1.2)	579(98.3)
Anyhealth problem	163(27.7)	424(72.0)

4.19: Respondents eating behaviourpattern

Theeatingbehaviorpatternoftherespondentsshowsthatmajorityofthemusually skipbreakfast(86.7%),eatatafoodrestaurantatleastthreetimesaweek(65.9%), eatsnacksalot(62.8%),snackmoreatnight(72.4%) andsometime snackeven when theyarenot hungry(49.6%). Half (50.0%) of therespondents reported they have a sweettooth.Abouthalf (47.9%)oftherespondentsreportedthattheir emotionsaffectwhattheyeatand howmuchtheyeat.However,onlyafewofthe respondentschosehealthy foods(3.2%)andwatchthe portion sizes of their food (4.1%).

Table 4.19: Respondents eating behaviourpattern

Variables	Poor n (%)	Average n (%)	Good n (%)	Non response n (%)
Istop for fast food breakfaston mywayto Work	14(2.4)	65(11.0)	459(77.9)	46(7.8)
Myemotions affect whatand howmuch Ieat	60(10.2)	282(47.9)	207(35.1)	34(5.8)
Iuse low fat food product	361(61.3)	159(27.0)	18(3.1)	44(7.5)
Icarefullywatch the portion sizesof myfood	275(46.7)	235(39.9)	24(4.1)	48(8.1)
Ichoose Healthyfoods to prevent heartdisease	290(49.3)	189(32.1)	19(3.2)	85(14.4)
Ieatmeatlessmeals fromtime to time becauseIthink that is healthier for me	17(2.9)	118(20.0)	367(62.3)	83(14.1)
Iama snacker	47(8.0)	122(20.7)	370(62.8)	43(7.3)
Isnack more atnight	18(3.1)	98(16.6)	426(72.4)	40(6.8)
Irarelyeatbreakfast	8(1.4)	33(5.6)	511(86.7)	30(5.1)
Itryto limitintake of red meat (beef)	19(32)	169(28.7)	336(57.1)	57(9.7)
Ihave a sweet tooth	21(3.6)	224(38.0)	294(50.0)	42(7.1)
Isometimes snack even when Iamnothungry	30(5.1)	185(31.4)	292(49.6)	76(12.9)
Ieatoutbecauseitismoreconvenientthan eating athome	10(1.7)	65(11.0)	455(77.3)	52(8.8)
Preparing meals athome	14(2.4)	63(10.7)	566(79.1)	40(6.8)
Iwillratherbuytakeoutfoodandbringithome than cook	14(2.4)	68(11.5)	444(75.4)	54(9.2)
I have at least three to four servings of vegetables perday	275(46.7)	208(35.3)	20(3.4)	77(13.1)
Myeating habits are veryroutine	90(15.3)	340(57.7)	90(15.2)	62(10.5)
IfIdonotfeelhungry,Iwillskipamealeven if it is time to eat	81(13.8)	180(30.6)	256(43.4)	64(10.9)
Whenchoosingfastfood,Ipickaplacethat offerhealthyfoods	240(40.8)	177(30.1)	37(6.3)	127(21.6)
Ieatata fast food restaurantat least three times a week	47(8.0)	65(11.0)	388(65.9)	83(14.1)

4.20 Perceived health relatedquality oflifeofrespondents

Theoverallhealth-relatedqualityoflife(Table4.20)showedthattherespondentsperformed bestintheroleofEmotional(Mean=69.58±30.20)andleastonthereportedhealthTransition (Mean=42.02±27.35)domains,whiletheoverallreportedquality oflifeforallthe respondents was 65.93±15.69.

The respondentslivingintheurbanareasreportedbetter-perceivedquality oflifeinallthe domainsof theHRQL exceptinthe Generalhealth(62.47±18.37vs63.19±16.39), mental health (63.16±14.83 vs63.77±14.15) and socialhealth (60.99±36.25vs 64.45±31.27) domains.UrbanresidentsinIbarapaLGAhadahigherperceivedhealth-relatedqualityoflife inallthe domainsthan urban residentsinotherLGAs exceptfor thesocialfunctioningand Reportedhealthtransitiondomains.The pattern washowever notthe same among respondents livingin rural areas.

Table 4.20 Perceived health relatedqualityoflifeofrespondents

		ATIBA	IBARAPA	IWAJOWA	COMBINE	MEAN
Mean±SD	Mean±SD	Mean±SD	DMean±SD	Mean±SD		
Physical functioning	**Urban**	66.13±38.55	71.88±31.68	59.56±30.75	66.37±34.00	65.99±32.24
	Rural	68.87±28.90	63.51±31.25	63.47±29.77	65.50±29.88	
Role physical	**Urban**	63.28±32.72	72.27±28.85	63.06±29.60	66.68±30.56	65.92±29.95
	Rural	65.56±28.39	62.67±31.24	66.16±28.43	64.93±29.17	
Bodily pain	**Urban**	56.63±21.07	63.91±24.50	55.50±28.08	59.10±24.88	58.74±23.75
	Rural	55.83±20.86	55.00±22.53	63.79±22.68	58.29±22.24	
General Health	**Urban**	67.69±17.95	61.95±18.35	57.70±17.59	62.47±18.37	62.78±17.52
	Rural	66.09±15.36	63.04±16.49	60.11±17.02	63.19±16.39	
Vitality	**Urban**	61.60±15.71	70.65±17.83	66.06±19.10	66.43±17.95	65.90±17.54
	Rural	65.17±17.32	64.44±19.19	65.92±14.69	65.21±17.01	
Mental health	**Urban**	57.74±14.79	65.74±15.06	65.50±13.09	63.16±14.83	63.43±14.53
	Rural	62.34±11.90	63.24±17.51	65.81±13.13	63.77±14.15	
Social functioning	**Urban**	38.34±33.20	70.70±32.05	72.13±33.80	60.99±36.25	62.50±34.18
	Rural	60.16±30.04	52.70±31.87	79.17±26.32	64.45±31.27	
Role Emotional	**Urban**	65.22±31.30	75.91±29.17	68.50±30.99	70.33±30.66	69.58±30.20
	Rural	67.71±28.62	63.06±33.02	74.33±26.90	68.61±29.64	
Reported Health Transition	**Urban**	57.45±31.33	38.48±23.67	37.00±26.47	43.98±28.52	42.02±27.35
	Rural	45.83±29.39	38.85±25.89	33.05±18.48	39.49±25.61	
Physical Health	**Urban**	64.42±23.29	67.63±20.40	59.22±20.99	64.09±21.73	63.83±20.25
	Rural	65.14±18.79	61.83±18.64	63.08±17.19	63.49±18.20	
Mental Health	**Urban**	57.68±15.46	70.03±14.99	67.25±16.72	65.32±16.50	65.22±15.89
	Rural	63.99±14.35	62.04±16.69	68.90±13.77	65.09±15.09	
Health related quality oflife	**Urban**	63.43±17.35	69.80±15.56	64.37±16.71	66.17±16.69	65.93±15.69
	Rural	66.17±14.73	63.46±15.14	66.88±13.03	65.63±14.32	

4.21: Correlation between domains ofhealthrelatedquality oflife

Table 4.21showsthecorrelationbetweenthedomains(subscales) ofthe Health-related Quality ofLife.Theroleofphysicalsubscalehadasignificantpositivecorrelationwiththe othersubscalesofHRQL($p<0.01$).Similarly,Bodily pain(BP),General(GH),andVitality (VT)subscales of HRQL had significantpositivecorrelations with othersubscales ($p<0.01$). ThosethatdowellontheBodily pain,GeneralHealthandVitality subscalesoftheHRQL willalsodowellontheothersubscales.ThecorrelationbetweenBMI andHRQL(andits subscales), withvaluesrangingfromfrom-0.06 to 0.04,arenotsignificant. However,having agoodquality oflife(asmeasured by theReportedHealthTransition(RH)subscale),also meanthavingagoodqualityoflifeonthePhysicalhealth(PHH)subscale($r=0.30$,$p<0.01$), MentalHealth(MEH)subscale($r=0.14$,$p<0.01$)andtheoverallhealth-relatedQualityofLife (HQRL) scale ($r=0.31$, $p<0.01$).

Table 4.21: Correlation between domains ofhealthrelatedquality oflife

Variables		PF	RP	BP	GH	VT	MH	SF	RE	RH	PHH	MEH	HRQL
1.	PF	1.00											
2.	RP	0.61**	1.00										
3.	BP	0.33**	0.46**	1.00									
4.	GH	0.35**	0.49**	0.52**	1.00								
5.	VT	0.32**	0.49**	0.53**	0.53**	1.00							
6.	MH	0.08	0.25**	0.33**	0.37**	0.56**	1.00						
7.	SF	0.13*	0.27**	0.38**	0.17**	0.34**	0.36**	1.00					
8.	RE	0.49**	0.86**	0.43**	0.46**	0.49**	0.27**	0.26**	1.00				
9.	RH	0.27**	0.21**	0.16**	0.25**	0.17**	0.05	0.03	0.15	1.00			
10.	PHH	0.83**	0.86**	0.64**	0.71**	0.56**	0.29**	0.28**	0.74**	0.30**	1.00		
11.	MEH	0.36**	0.66**	0.56**	0.53**	0.81**	0.73**	0.63**	0.73**	0.14**	0.65**	1.00	
12.	HRQL	0.70**	0.85**	0.67**	0.70**	0.72**	0.51**	0.46**	0.80**	0.31**	0.94**	0.86**	1.00

PF-*Physicalfunction,****RP-****Rolephysical,****BP-****Bodilypain,****GH****-General,****VT-***Vitality,****MH-***Mentalhealth,****SF-****Socialfunctioning,****RE-****Roleemotional,****RH-***ReportedhealthTransition,*

PHH-*Physical health, **MEH-**Mentalhealth, **HRQL-**Health related qualityof life*

***-Correlation is significant atthe 0.01 level*

**-Correlation is significant*

atthe 0.05 level

4.22. Nutrient intakeofrespondents by LGA andlocality

Thenutrient intakeof therespondents accordingto theirLGAs and localityis reported in Table 4.22. Themean nutrient intakeof therespondents for calorie, protein, CHO, fat, vitamin A, folate, calcium, iron and zinc was 1839.47±647.59, 62.26±34.42, 39.31±121.25, 37.63±20.55, 24302.82±14884.25, 75.0±132.6, 164.9±140, 15.78±6.35, and 10.95±5.85 respectively. Calorie, protein, carbohydrate andfatintakesignificantlydiffer from one Local Government to theother and across localities ($p<0.05$).Inasimilar vein, themean monounsaturated and polyunsaturated fat, vitamin, calcium, iron, and zinc intakediffered significantlyfrom each other across the localities ($p<0.05$).

Table 4.22a: Nutrient intakeofrespondents byLGA andlocality

		ATIBA Mean±SD	IBARAPA Mean±SD	IWAJOWA Mean±SD	Total F	Sig.
calorie intake	**Urban**	1963.89±588.40	1591.66±508.23	1747.53±768.69	1839.47±647.59	16.495	<0.001*
	Rural	2297.98±504.07	1611.87±727.28	1778.54±561.42			
protein intake	**Urban**	70.50±29.95	51.75±17.12	56.45±28.48	62.26±34.42	6.172	0.002
	Rural	70.04±19.86	52.43±26.19	68.54±57.02			
CHO intake	**Urban**	323.92±91.92	271.74±96.77	302.89±146.55	309.31±121.25	17.028	<0.001
	Rural	410.07±105.84	274.52±145.36	272.25±86.31			
dietary fibre intake	**Urban**	3.34±4.75	2.18±3.14	3.15±5.10	3.59±5.65	1.148	0.319
	Rural	5.31±7.42	4.72±5.73	3.01±6.28			
fatintake	**Urban**	41.00±17.26	32.70±13.04	34.84±19.80	37.63±20.55	3.447	0.033
	Rural	40.92±14.24	33.12±24.54	41.28±28.08			
saturated fatintake	**Urban**	3.98±3.04	2.17±1.58	3.85±7.16	3.74±5.63	.125	0.882
	Rural	3.80±4.39	5.01±10.66	3.81±3.70			
mono_fat intake	**Urban**	5.18±3.52	3.44±2.63	8.30±8.18	5.58±5.82	3.129	0.046
	Rural	5.57±5.50	5.87±7.90	5.84±5.59			
poly_fat intake	**Urban**	4.19±4.60	1.91±2.35	4.05±2.93	3.74±3.73	3.174	0.044
	Rural	2.73±2.28	4.65±4.28	4.89±4.22			
cholesterol intake	**Urban**	90.18±107.96	54.39±65.62	43.46±27.11	78.61±117.49	2.845	0.060
	Rural	114.69±198.32	70.56±103.98	86.90±105.25			
water	**Urban**	1817.33±783.21	1859.14±896.66	1909.32±558.23	2068.68±2070.2	2.078	0.127
	Rural	3003.87±4557.18	1660.61±1094.9	2064.76±712.19			
vit_a intake	**Urban**	28355.87±15224.44	22866.13±12364.43	29028.54±19612.75	24302.82±14884.25	13.647	<0.001
	Rural	26413.83±14674.76	11243.23±6750.83	26876.90±12463.71			
vit_c intake	**Urban**	10.45±13.46	18.57±25.81	24.03±28.60	18.28±28.93	1.073	0.344
	Rural	19.69±46.28	18.04±22.22	20.06±26.40			
thiamin intake	**Urban**	0.58±0.59	0.32±0.	0.45±1.03	0.52±0.75	.659	0.518
	Rural	0.59±0.49	0.74±1.1145	0.45±0.70			

Table 4.22b: Nutrient intakeofrespondents byLGA andlocality(Continued)

		ATIBA	IBARAPA	IWAJOWA	Total		
		Mean±SD	Mean±SD	Mean±SD		F	Sig.
Riboflavin intake	**Urban**	0.51±0.54	0.26±0.33	0.33±0.70	0.43±0.55	1.248	0.289
	Rural	0.44±0.40	0.68±0.78	0.36±0.47			
niacin intake	**Urban**	5.71±5.44	3.23±3.82	4.20±7.48	5.12±6.13	.874	0.418
	Rural	5.49±4.39	7.79±8.85	4.53±5.66			
vit_b6 intake	**Urban**	0.30±0.32	0.24±0.28	0.27±0.20	0.36±0.45	2.944	0.055
	Rural	0.32±0.35	0.71±0.78	0.33±0.42			
folate intake	**Urban**	94.12±117.44	45.80±87.92	61.04±190.71	75.0±132.6	1.526	0.220
	Rural	91.79±103.97	106.37±190.25	54.94±93.79			
vit_B12 intake	**Urban**	1.95±1.82	1.28±0.90	1.47±0.72	1.94±1.94	1.343	0.263
	Rural	2.25±1.21	2.07±1.58	2.41±3.36			
calcium intake	**Urban**	213.18±194.40	140.85±111.97	119.81±83.29	164.9±140.70	4.202	0.016
	Rural	179.31±125.99	188.50±122.57	143.39±150.55			
phosphoru s intake	**Urban**	312.75±264.80	186.41±133.70	231.29±205.70	279.32±248.70	1.209	0.300
	Rural	311.78±174.55	335.65±233.33	291.63±360.48			
sodium intake	**Urban**	727.06±682.54	469.25±566.82	504.77±450.40	585.20±587.3	2.157	0.118
	Rural	651.01±605.67	641.06±507.32	516.48±622.53			
potassium intake	**Urban**	560.51±490.15	401.58±360.94	500.65±359.12	526.22±463.0	.084	0.920
	Rural	506.95±384.40	633.26±437.87	557.65±623.73			
zincintake	**Urban**	11.97±7.40	9.05±3.93	10.09±4.80	10.95±5.85	8.020	<0.001
	Rural	13.65±5.03	9.65±5.11	10.92±6.67			
ironintake	**Urban**	17.21±6.12	13.45±4.93	14.91±7.49	15.78±6.35	15.332	<0.001
	Rural	20.04±5.20	14.12±7.50	14.67±4.88			
magnessiu mintake	**Urban**	143.31±54.40	113.80±51.91	136.6±74.71	191.61±836.82	1.049	0.352
	Rural	168.39±58.18	126.95±71.71	403.03±1859.10			

4.23. Nutritional status oftherespondents

Thenutritionalstatusofthe respondentsisshownintable4.23,the resultshowedthatabout 18.4%ofthe respondentswere underweight,60.2%were ofnormalweight,and2.5%were overweight, while8.9%were obesein AtibaLGA.InIbarapaLGA,alargerpercentage (52.6%)oftherespondentsfallwithinthenormalBMI range,16.0%oftherespondentsfell undertheunderweight category, 21.4%wereoverweight, while10.2%wereobese. In IwajowaLGA,thepercentageoftheunderweightrespondentsis16.3%,57.2%wereno rmal, 13.3%wereoverweight,while 13.3%wereobese.

Table 4.23: Nutritional status ofthe respondents

	Placeof Residence			
ATIBALGA		Urban n (%)	Rural n (%)	Total n (%)
	Underweight	5(5.0)	11(12.20)	16(8.4)
	Normal	55(54.5)	60(66.7)	115(60.2)
	Overweight	26(25.7)	17(18.9)	43(22.5)
	Obese	15(14.9)	2(2.2)	17(8.9)
IBARAPA	Underweight	17(13.9)	14(19.4)	31(16.0)
	Normal	53 (43.4)	49(68.1)	102(52.6)
	Overweight	36(29.5)	5(6.9)	41(21.1)
	Obese	16(13.1)	4(5.6)	20(10.3)
IWAJOWA	Underweight	9(10.3)	18(22.8)	27(16.3)
	Normal	51(58.6)	44(55.7)	95(57.2)
	Overweight	12(13.8)	10(12.7)	22(13.3)
	Obese	15(17.2)	7(8.9)	22(13.3)

4.24 Relationship betweenrespondent's Body Massindex andlocality

ThelocalityofrespondentsinAfijioLGAwassignificantlyassociatedwiththeirBody Mass Index(BMI)($p<0.05$).Similarly,there'sastatistically significantrelationshipbetweenthe BMIofrespondents inIbarapaLGAand their locality($P<0.05$).

InAtibaLGA,for instance,theproportionobese washigher intheurbanareas(14.9%) than the ruralareas(2.2%),while thosethatwereunderweightwerehigherinthe ruralareas (12.0%)thanthe urbanareas(5.0%).Theproportionofrespondentsthat were overweightin OyoIbarapawashigherintheurbanlocality (29.5%)thanrurallocalities(6.9%).This relationship is statisticallysignificant ($p<0.05$)

Table 4.24:Relationship betweenrespondent's Body Mass index and locality

Placeof Residence					Chi	P-value
		Urban	Rural	Total	Square	
ATIBALGA		n (%)	n (%)	n (%)		
	Underweight	5(5.0)	11(12.20)	16(8.4)	13.704	0.003
	Normal	55(54.5)	60(66.7)	115(60.2)		
	Overweight	26(25.7)	17(18.9)	43(22.5)		
	Obese	15(14.9)	2(2.2)	17(8.9)		
IBARAPA	Underweight	17(13.9)	14(19.4)	31(16.0)	19.495	<0.001
	Normal	53 (43.4)	49(68.1)	102(52.6)		
	Overweight	36(29.5)	5(6.9)	41(21.1)		
	Obese	16(13.1)	4(5.6)	20(10.3)		
IWAJOWA	Underweight	9(10.3)	18(22.8)	27(16.3)	6.236	0.101
	Normal	51(58.6)	44(55.7)	95(57.2)		
	Overweight	12(13.8)	10(12.7)	22(13.3)		

4.25 Association betweensocio-demographic variables andadequacy ofIron

Table4.25showstheassociationbetweensocio-demographicvariablesandthe levelofadequacy ofiron.Religion(P<0.001)andMaritalStatus(P<0.05)weresignificantly associatedwith Levelofadequacy Iron.Mostoftherespondentsreportedhaving anadequatetoanexcess levelofIron,withreportedproportionsashighas85.7%.Ina similarmanner, afewer proportionofthe respondentsreportedhavinganinadequate levelofiron.More male (75.30%) than Female (66.90%) hadan excess level of zinc. Also, the proportion that had an excessIronintakewashigheramongrespondentsfromMonogamousmarriages(75.6 %)than those from polygamousmarriages(63.6%).

Table 4.25: Association betweensocio-demographic variables and adequacy ofIron

Variable	LevelofAdequacyIron Inadequate	Adequate	Excess	Chi-square	P
Agegroup					
<50 years	1(2.20)	7(15.80)	37(82.20)	5.55	0.24
50 – 70	8(6.60)	30(24.60)	84(68.90)		
>70 years	12(4.80)	25(30.90)	53(65.40)		
Sex					
Male	4(4.10)	20(20.60)	73(75.30)	1.98	0.37
Female	8(5.30)	42(27.80)	101(66.90)		
Maritalstatus					
Married	10(5.70)	40(22.70)	126(71.60)	11.73	0.02
Divorced/separated	0(0)	6(75.00)	2(25.00)		
Widow	2(3.20)	16(25.40)	45(71.40)		
Type of marriage					
Monogamy	5(3.7)	28(20.7)	102(75.6)	4.19	0.12
Polygamy/polyandry	7(6.4)	33(30)	70(63.6)		
Wives group					
1	4(3.10)	27(21.30)	96(75.60)	2.71	0.61
2	3(6.70)	13(28.90)	29(64.40)		
>2	1(4.80)	6(28.60)	14(66.70)		
Education category					
None	7(4.20)	45(27.30)	113(68.50)	6.09	0.41
Primary	5(10.20)	9(18.40)	35(71.40)		
Secondary	0(0)	4(26.70)	11(73.30)		
Tertiary	0(0)	3(20.00)	12(80.00)		
Occupation category					
None	0(0)	10(40.00)	15(60.00)	10.83	0.21
Trade/business	10(8.40)	30(25.20)	79(66.40)		
Farmers	2(2.70)	17(22.70)	56(74.70)		
Civilservants	0(0)	1(14.30)	6(85.70)		
Artisans	0(0)	4(19.00)	17(81.00)		
Religion category					
Christian	9(7.80)	26(22.40)	81(69.80)	24.78	<0.001
Islam	2(1.60)	35(27.60)	90(70.90)		
Others	1(100.00)	0(0)	0(0)		

4.26: Association betweensocio-economic variables andthe level ofadequacy ofIron

Theassociationbetweensocio-economicvariablesandthe levelofadequacy ofiron isshowninTable4.26.None ofthesocioeconomicvariableswere significantly associatedwiththe Levelofthe adequacy ofIron.The proportionwiththe excesslevelofIron intakewashigheramong respondentswithahouseholdsizegreaterthan6 (74.60%)thanthosewithahouseholdsizelesserthan6(68.4%).Among those havingan inadequatelevelof Ironintake,thoselivinginaroomhadmoreproportion (8.70%)thanthoseliving inflatwithbedrooms(3.30%)andanothertypeof accommodation (4.40%).

Table 4.26: Association betweensocio-economicvariables andadequacy ofIron

Variable	LevelofAdequacyIron			Chi-square	P
Inadequate	Adequate	Excess			
Incomecategory					
<10,000	7(4.40)	40(25.30)	111(70.30)	0.74	0.95
10,000–49,000	4(5.20)	20(26.00)	53(68.80)		
>/=50,000	1(9.10)	2(18.20)	8(72.70)		
Totalhouseholdcategory					
</=6	10(5.30)	49(26.20)	128(68.40)	0.90	0.64
>6	2(3.40)	13(22.00)	44(74.60)		
Houseownership					
No	4(6.20)	16(24.60)	45(69.20)	0.33	0.85
Yes	7(4.30)	40(24.80)	114(70.80)		
Typeofhousecategory					
A room	4(8.70)	10(21.70)	32(69.60)	6.20	0.40
Self-contained	0(0)	9(20.50)	35(79.50)		
Flatwithbedrooms	2(3.30)	18(29.50)	41(67.20)		
Others(e.g.facemeI faceyou)	4(4.40)	25(27.80)	61(67.80)		
Main source of drinking watercategory					
Surface/rainwater	2(3.30)	11(18.00)	48(78.70)	5.87	0.44
Well	2(3.80)	17(32.70)	33(63.50)		
Borehole	7(6.70)	24(23.10)	73(70.20)		
Others	1(3.30)	10(33.30)	19(63.30)		
Mainsourceofcookingfuel category					
Wood	5(3.70)	30(22.10)	101(74.30)	8.96	0.18
Charcoal	1(2.60)	14(35.90)	24(61.50)		
Kerosene	6(8.80)	16(23.50)	46(67.60)		
Others	0(0)	2(66.70)	1(33.30)		
Main source of lighting category					
None	0(0)	2(33.30)	4(66.70)	3.36	0.76
Candle/lantern	4(3.70)	25(22.90)	80(73.40)		
Public power supply(e.g. PHCH)	5(5.50)	27(29.70)	59(64.80)		
Alternativesources(e.g.solar, generator)	3(7.50)	8(20.00)	29(72.50)		
Toiletfacilityinhousehold					
None(e.g.openbush,surface water	9(4.30)	53(25.10)	149(70.60)	8.78	0.07
Pitlatrine	0(0)	6(27.30)	16(72.70)		
Watercloset	3(20.00)	3(20.00)	9(60.00)		
Refuse management in household					
None	11(4.80)	58(25.10)	162(70.10)	3.52	0.48
Burning	0(0)	1(11.10)	8(88.90)		
Cityservice	1(12.50)	3(37.50)	4(50.00)		
Poor	5(4.70)	26(24.30)	76(71.00)	0.64	0.96
Quintile3 levels					
Average	2(4.10)	11(22.40)	36(73.50)		
Rich	5(5.40)	25(27.20)	62(67.40)		

4.27 Association betweensocio-economic variablesandadequacy ofdietary fibre

Table4.27showstheassociationbetweensocioeconomic variablesandthelevel ofadequacy ofdietaryfibreintake.Noneofthesocioeconomicvariablesis significantly relatedtothelevelofadequacyofdietary fibre.Mostofthe respondentshadinadequatedietaryfibreintake,withreportedproportionsranging from95% to100%.Inasimilar way,fewerpeoplehadadequate toexcesslevelof dietary fibreintake.The proportionwithan inadequatelevelofdietary fibreintakewas thesameforthoseusingCharcoal,Kerosene,andothersasthe mainsourceofcooking fuel (100%),which washigher than that ofthoseusingwood (97.80%).

Table 4.27:Association betweensocio-economicvariables andadequacy ofdietaryfibreintake

Variables		LevelofAdequacyDietaryFibre			Chi-square	P
Variable	*Category*	Inadequate	Adequate	Excess		
Incomecategory	*<10,000*	156(98.70)	2(1.30)	0(0)	3.31	0.51
	10,000–49,000	76(98.70)	0(0)	1(1.30)		
	>/=50,000	11(100.00)	0(0)	0(0)		
Totalhousehold	*</=6*	185(98.90)	1(0.50)	1(0.50)		
	>6	58(98.30)	1(1.70)	0(0)		
Houseownership	*No*	65(100.00)	0(0)	0(0)	1.23	0.54
	Yes	158(98.10)	2(1.20)	1(0.60)		
Typeofhouse	*A room*	45(97.80)	0(0)	1(2.20)	6.34	0.39
	Self-contained	43(97.70)	1(2.30)	0(0)		
	Flatwithbedrooms	61(100.00)	0(0)	0(0)		
	Others(e.g.facemeIface you	89(98.90)	1(1.10)	0(0)		
The mainsourceofdrinking water	**watercategory** *Surface/rainwater*	59(96.70)	1(1.60)	1(1.60)		
	Well	52(100.00)	0(0)	0(0)		
	Borehole	103(99.00)	1(1.00)	0(0)		
	Others	30(100.00)	0(0)	0(0)		
Mainsourceofcooking fuel	*Wood*	133(97.80)	2(1.50)	1(0.70)	2.46	0.87
	Charcoal	39(100.00)	0(0)	0(0)		
	Kerosene	68(100.00)	0(0)	0(0)		
	Others	3(100.00)	0(0)	0(0)		
Main source of lighting	*None*	6(100.00)	0(0)	0(0)	7.43	0.28
	Candle/lantern	108(99.10)	1(0.90)	0(0)		
	Public power supply(e.g.	91(100.00)	0(0)	0(0)		
	PHCH)					
	Alternative sources (e.g. solar,generator)	38(95.00)	1(2.50)	1(2.50)		
Toilet facility in household	*None (e.g. open bush ,surface water*	208(98.60)	2(0.90)	1(0.50)	0.53	0.97
	Pitlatrine	22(100.00)	0(0)	0(0)		
	Watercloset	15(100.00)	0(0)	0(0)		
Refuse management household	*None*	228(98.70)	2(0.90)	1(0.40)	0.22	0.99
	Burning	9(100.00)	0(0)	0(0)		
	Cityservice	8(100.00)	0(0)	0(0)		
Quintile 3 levels	*Poor*	104(97.20)	2(1.90)	1(0.90)	4.00	0.41
	Average	49(100.00)	0(0)	0(0)		
	Rich	92(100.00)	0(0)	0(0)		

4.28: Socio-demographic variables andadequacy ofVitaminA intake

Theassociationbetweenthelevelofadequacy ofVitaminAandSocio demographic variables isshown inTable 4.28. Allthe respondents(100%)had an excesslevelofVitamin Aintake.Consequently,theCorresponding Chisquare and Pvalues couldn't be reported.

Table 4.28: Socio-demographic variables andadequacy ofVitaminAintake

Variable	LevelofAdequacyVitamin A			Chi-square	P
	Inadequate	Adequate	Excess		
Age group					
<50 years	0(0)	0(0)	45(100)		
50 – 70	0(0)	0(0)	122(100)		
>70 years	0(0)	0(0)	81(100)		
Sex					
Male			97(100)		
Female			151(100)		
Maritalstatus					
Married	0(0)	0(0)	176(100.00)		
Divorced/separated	0(0)	0(0)	8(100.00)		
Widow	0(0)	0(0)	63(100.00)		
Type of marriage					
Monogamy					
Polygamy/polyandry					
Wives group					
1	0(0)	0(0)	127(100.00)		
2	0(0)	0(0)	45(100.00)		
>2	0(0)	0(0)	21(100.00)		
Education category					
None	0(0)	0(0)	165(100.00)		
Primary	0(0)	0(0)	49(100.00)		
Secondary	0(0)	0(0)	15(100.00)		
Tertiary	0(0)	0(0)	15(100.00)		
Occupation category					
None	0(0)	0(0)	25(100.00)		
Trade/business	0(0)	0(0)	119(100.00)		
Farmers	0(0)	0(0)	75(100.00)		
Civilservants	0(0)	0(0)	7(100.00)		
Artisans	0(0)	0(0)	21(100.00)		
Religion category	0(0)	0(0)			
Christian	0(0)	0(0)	116(100.00)		
Islam	0(0)	0(0)	127(100.00)		
Others	0(0)	0(0)	1(100.00)		

4.29 Socio-economic variables andthe level ofadequacy ofvitaminA

Table4.29showstheassociationbetweenthelevelofadequacy ofvitaminAand Sociodemographic variables.Interestingly,allthe respondents(100%) hadan excess level of adequacyof vitamin A intake while noneof therespondents fellwithin the adequateandthe inadequate categoriesof vitaminA intake.Consequently,the CorrespondingChisquareandPvaluescouldn'tbereportedastherewasnothing to comparewith.

Table 4.29:Socio-economic variables andthe level ofadequacy ofvitaminA

Variable	LevelofAdequacyVitamin A		Chi-square	P
Inadequate	Adequate	Excess		
Income category				
<10,000	0(0)	0(0)	158(100.00)	
10,000 – 49,000	0(0)	0(0)	77(100.00)	
>/=50,000	0(0)	0(0)	11(100.00)	
Totalhousehold category				
</=6	0(0)	0(0)	187(100.00)	
>6	0(0)	0(0)	59(100.00)	
House ownership				
No	0(0)	0(0)	65(100.00)	
Yes	0(0)	0(0)	161(100.00)	
Type ofhousecategory				
A room	0(0)	0(0)	46(100.00)	
Self-contained	0(0)	0(0)	44(100.00)	
Flatwithbedrooms	0(0)	0(0)	61(100.00)	
Others(e.g.facemeIface you)				
Main source drinking watercategory				
Surface/rain water	0(0)	0(0)	61(100.00)	
Well	0(0)	0(0)	52(100.00)	
Borehole	0(0)	0(0)	104(100.00)	
Others	0(0)	0(0)	30(100.00)	
Main source of cooking fuelcategory				
Wood	0(0)	0(0)	136(100.00)	
Charcoal	0(0)	0(0)	39(100.00)	
Kerosene	0(0)	0(0)	68(100.00)	
Others	0(0)	0(0)	3(100.00)	
Main source of lighting category				
None	0(0)	0(0)	6(100.00)	
Candle/lantern	0(0)	0(0)	109(100.00)	
Public power su pply(e.g. PHCH)	0(0)	0(0)	91(100.00)	
Alternative sources (e.g. solar, generator)	0(0)	0(0)	40(100.00)	
Toiletfacilityin household				
None (e.g. open bush, surfacewater	0(0)	0(0)	211(100.00)	
Pitlatrine	0(0)	0(0)	22(100.00)	
Watercloset	0(0)	0(0)	15(100.00)	
Refuse management in household				
None	0(0)	0(0)	231(100.00)	
Burning	0(0)	0(0)	9(100.00)	
Cityservice	0(0)	0(0)	8(100.00)	
Quintile 3leves				
Poor	0(0)	0(0)	107(100.00)	
Average	0(0)	0(0)	49(100.00)	
Rich	0(0)	0(0)	92(100.00)	

4.30 Socio-demographic variables andthe level ofadequacy ofVitaminC

Thelevelofadequacy ofVitaminCanditsassociationwithsociodemographic variablesisshowninTable4.30.Withproportionsrangingfrom85.70%to 100%,mostoftherespondentshadan inadequatelevelofVitaminC intake.No sociodemographic variable hada significantassociationwiththe levelof adequacy ofVitaminC.Theproportionthatreportedhavingexcesslevelof VitaminCwashigherinpeoplelessthan50years(2.2%)thanthosebetween 50and70years (0.80%),andthoseolder than 70years (1.20%). Similarly,the proportionwithan excess levelofVitaminCwashigheramong CivilServants (14.30%) thanfarmers(1.30%) andTraders(0.80%). Theproportionof the respondentshaving an inadequatelevelofVitaminCwashigheramong divorced or seperatedandwidowedrespondents(100% than Marriedrespondents (97.20%). Thosewithtwowives(wivesgroup) hadmore respondentswith an adequatelevelofVitaminC(4.80%)thanthosewithmorethantwowives(wives group) (0%) oronewife(Wives group)(0%).

Table 4.30 Socio-demographic variables andthe level ofAdequacy ofVitaminC

Variable	LevelofAdequacy Vitamin C			Chi-square	P
	Inadequate	Adequate	Excess		
Age group					
<50 years	43(95.60)	1(2.20)	1(2.20)	2.34	0.67
50 – 70	120(98.40)	1(0.80)	1(0.80)		
>70 years	80(98.80)	0(0)	1(1.20)		
Sex					
Male	95(97.90)	1(1.00)	1(1.00)	1.14	0.93
Female	148(98.0)	1(0.70)	2(1.30)		
Maritalstatus					
Married	171(97.20)	2(1.10)	3(1.70)	2.06	0.73
Divorced/separated	8(100.00)	0(0)	0(0)		
Widow	63(100.00)	0(0)	0(0)		
Type of marriage					
Monogamy	133(98.5)	0(0)	2(1.5)	2.626	0.27
Polygamy/polyandry	107(97.3)	2(1.8)	1(0.9)		
Wives group					
1	125(98.40)	0(0)	2(1.60)	9.26	0.06
2	45(100.00)	0(0)	0(0)		
>2	20(95.20)	1(4.80)	0(0)		
Education category					
None	164(99.40)	0(0)	1(0.60)	13.32	0.04
Primary	47(95.90)	1(2.00)	1(2.00)		
Secondary	14(93.30)	1(6.70)	0(0)		
Tertiary	14(93.30)	0(0)	1(6.70)		
Occupation category					
None	25(100.00)	0(0)	0(0)	11.37	0.18
Trade/business	117(98.30)	1(0.80)	1(0.80)		
Farmers	73(97.30)	1(1.30)	1(1.30)		
Civilservants	6(85.70)	0(0)	1(14.30)		
Artisans	21(100.00)	0(0)	0(0)		
Religion category					
Christian	114(98.30)	0(0)	2(1.70)	2.29	0.68
Islam	124(97.60)	2(1.60)	1(0.80)		
Others	1(100.00)	0(0)	0(0)		

4.31 Socio-economic variables andthe level ofadequacy ofVitaminC

Table4.31showstheassociationbetweenthelevelofAdequacyofVitaminCand socioeconomicvariables.Themainsourceoflightinghadasignificantassociation withthelevelofadequacyofVitaminC(P<0.05).Theproportionthatreported havingan excesslevelofVitaminCadequacywashigheramongthosewithnosource oflightingintheirhomes(16.7%)thanthoseusingpublicpower(2.20%)or Candle/lantern(0%).Generally,veryhighproportionsoftherespondentshad inadequate levels of Vitamin C adequacy (87.5% to 100%), while a small proportionhadadequatetoexcesslevelsofadequacy ofVitaminC.amongthose withexcesslevelofVitaminCadequacy,thoseusingCityserviceasameansof Refusemanagementinth e householdhadahigherproportion(12.50%)thanthose with no means of Refusemanagement in household (0.90%)

Table 4.31 Socio-economic variables andthe level ofadequacy ofVitaminC

Variable	LevelofAdequacy Vitamin C			Chi-square	P
Inadequate	**Adequate**	**Excess**			
Income category					
<10,000	155(98.10)	1(0.60)	2(1.30)	0.52	0.97
10,000 – 49,000	75(97.40	1(1.30)	1(1.30)		
>/=50,000	11(100.00)	0(0)	0(0)		
Totalhousehold category					
≤6	182(97.30)	2(1.10)	3(1.60)	1.61	0.45
>6	59(100.00)	0(0)	0(0)		
House ownership					
No	63(96.90)	0(0)	2(3.10)	2.92	0.23
Yes	158(98.10)	2(0.90)	1(0.60)		
Type ofhousecategory					
A room	46(100.00)	0(0)	0(0)	3.75	0.71
Self-contained	43(97.70)	0(0)	1(2.30)		
Flatwithbedrooms	60(98.40)	1(1.60)	0(0)		
Others(e.g.facemeIface you)	87(96.70)	1(1.10)	2(2.20)		
Main source drinking watercategory					
Surface/rain water	61(100.00)	0(0)	0(0)	7.02	0.32
Well	52(100.00)	0(0)	0(0)		
Borehole	99(95.20)	2(1.90)	3(2.90)		
Others	30(100.00)	0(0)	0(0)		
Main source of cooking fuelcategory					
Wood	132(97.10)	2(1.50)	2(1.50)	2.27	0.89
Charcoal	39(100.00)	0(0)	0(0)		
Kerosene	67(98.50)	0(0)	1(1.50)		
Others	3(100.00)	0(0)	0(0)		
Main source of lighting category					
None	5(83.30)	0(0)	1(16.70)	14.93	0.02
Candle/lantern	108(99.10)	1(0.90)	0(0)		
Public power supply(e.g. PHCH)	88(96.70)	1(1.10)	2(2.20)		
Alternative sources (e.g. solar, generator)	40(100.00)	0(0)	0(0)		
Toiletfacilityin household					
None (e.g. open bush, surfacewater	206(97.60)	2(0.90)	3(1.40)	0.90	0.93
Pitlatrine	22(100.00)	0(0)	0(0)		
Watercloset	15(100.00)	0(0)	0(0)		
Refuse management in household					
None	227(98.30)	2(0.90)	2(0.90)	9.01	0.06
Burning	9(100.00)	0(0)	0(0)		
Cityservice	7(87.50)	0(0)	1(12.50)		
Quintile 3leves					
Poor	106(99.10)	0(0)	1(0.90)	4.84	0.30
Average	49(100.00)	0(0)	0(0)		
Rich	88(95.70)	2(2.20)	2(2.20)		

Specific Objective3

Toidentify relationshipsbetweensocio-demographicandsocio-economichousehold characteristics that influencefoodhabits ofadults in Oyo state.

4.32: Correlation betweenage, BMI andeating behavior

InTable4.32,thecorrelationbetweenageandBMIwas-0.27($p<0.001$)indicatingthatolder peopletendtohavelowerBMIinthisstudy.Olderparticipantsalsotendtohavelowscores onmealskipping ($r=-0.01$,$p<0.001$)andculture/lifestylescalesofeatingbehaviour questionnaire($r=-0.12$,$p<0.001$).ThecorrelationbetweenBMI andsnacking/convenience was-0.12($p<0.001$),indicating thatthose whoate snacksandconvenience foods tendmore tohavelowerBMI.Alleatingbehaviourswereсignificantly positively correlated with eac h other.

Table 4.32: Correlationbetween age, BMI andEating behaviours

Variables	1	2	3	4	5	6	7	8
1. Age	1.00							
2. BMI	-0.27**	1.00						
3. Low-fatEating2	-0.02	0.08	1.00					
4. Snackingandconvenience2	-0.07	-0.12**	0.34**	1.00				
5. Emotionaleating2	-0.05	0.03	0.25**	0.55**	1.00			
6. Planningahead2	-0.05	-0.05	0.44**	0.64**	0.53**	1.00		
7. Mealskipping2	-.01**	0.07	0.35**	0.56**	0.52**	0.45**	1.00	
8. Cultural/LifestyleBehaviour2	-.12**	-0.02	0.30**	0.56**	0.59**	0.55**	0.44**	1.00

Note: **Correlationissignificantattheα=0.01

4.33: Correlation betweenage, BMI andhealth-relatedquality oflifeandnutrientadequacy

Thecorrelationbetweennutrientintakeandhealth-relatedqualityoflife(anditssubscales) isshowninTable 4.34.Calorie(r=0.1,p<0.01),protein(r=0.12,p<0.05), carbohydrate (r=0.15,p<0.01),Zinc(r=0.20,p<0.01)andiron intake(r=0.17,p<0.01)hadpositive significantcorrelationwithphysicalfunction. While none of thenutrientsintake correlated significantlywith anyofGH(General),VT(Vitality),and MH(Mental Health) subscales of HRQL,vitaminC(r=-0.12,p<0.05) andsodiumintake (r=-0.14,p<0.01) correlated negatively withRP(RolePhysical)subscaleoftheHRQL.Similarly,BP(Bodily pain) correlatednegativelywithcarbohydrate(r=-0.1,p<0.05),Sodium(r=-0.12,p<0.05),andIron intake(r=-0.12,p<0.05).Iron(r=-0.13,p<0.05),Calcium(r=-0.12,p<0.05)andcarbohydrate intake(r=-0.13,p<0.05)hadsignificantnegativecorrelationwithSocialFunctioningsubscale oftheHRQL.WhileonlySodiumintakenegativelycorrelatedsignificantlywithRE(r=-0.15, p<0.01); calories (r=0.15, p<0.01),chlorine(r=0.17, p<0.01), potassium(r=0.12,p<0.05), zinc (r=0.21, p<0.01) andiron intake (r=0.17, p<0.01) correlated positivelyand significantly withRH(ReportedHealthtransition).Only zincintake(r=0.12,p<0.05)correlated significantlywith PHH(Physical Health).

Table 4.33: Correlationbetweennutrient intakeandhealth-relatedquality oflife

Variables	PF	RP	BP	GH	VT	MH	SF	RE	RH	PHH	MEH	HRQL
CaloriesIntake	0.17**	0.05	-0.02	0.02	0.08	-0.02	-0.04	0.00	0.15**	0.10	0.00	0.07
ProteinIntake	0.12*	-0.03	-0.02	0.01	-0.01	-0.01	-0.02	-0.09	0.07	0.04	-0.05	0.01
CHOIntake	0.15**	0.01	-0.13*	0.00	-0.04	-0.05	-0.13*	-0.05	0.17**	0.05	-0.09	0.00
DfIntake	0.09	0.04	-0.06	0.06	-0.04	0.02	-0.09	-0.05	0.01	0.06	-0.05	0.02
FatIntake	0.07	-0.03	0.00	0.01	0.07	-0.04	0.00	-0.08	0.09	0.02	-0.02	0.01
Saturated FatIntake	0.04	0.08	0.00	-0.01	0.04	-0.06	0.07	0.07	0.09	0.05	0.04	0.05
Mono FatIntake	0.05	0.07	0.00	-0.01	0.04	-0.06	0.07	0.07	0.09	0.05	0.04	0.05
Poly FatIntake	0.05	0.08	0.01	-0.01	0.04	-0.06	0.05	0.08	0.09	0.05	0.04	0.06
CholesterolIntake	0.08	-0.05	0.01	0.05	0.03	0.07	-0.02	-0.03	0.07	0.03	0.01	0.03
VitA Intake	-0.05	-0.08	0.05	-0.02	0.03	-0.03	0.08	-0.05	0.03	-0.05	0.01	-0.03
VitCIntake	-0.01	-0.12*	0.02	-0.05	0.02	0.05	-0.04	-0.07	0.00	-0.06	-0.02	-0.04
ThiaminIntake	0.03	0.01	0.00	0.04	-0.02	0.01	-0.09	-0.02	-0.02	0.03	-0.04	0.00
RiboflavinIntake	0.02	-0.05	-0.03	0.00	0.00	0.08	-0.06	-0.08	-0.01	-0.02	-0.03	-0.03
NiacinIntake	0.05	0.02	-0.02	0.05	-0.02	0.03	-0.08	-0.03	0.02	0.04	-0.03	0.01
VitB6Intake	0.04	0.00	-0.03	0.03	-0.03	0.01	-0.06	-0.01	0.09	0.02	-0.03	0.01
FolateIntake	0.04	0.00	-0.01	0.05	-0.03	0.01	-0.11	-0.04	-0.02	0.03	-0.06	-0.01
VitB12Intake	0.06	0.04	0.09	0.02	0.10	0.02	-0.04	0.02	-0.02	0.07	0.03	0.06
Calcium Intake	0.06	-0.11	-0.08	0.04	0.03	0.09	-0.12*	-0.10	0.11	-0.02	-0.04	-0.02
Phosphorus Intake	0.10	0.02	0.00	0.08	0.05	0.08	-0.03	0.01	0.08	0.08	0.04	0.07
Sodium Intake	0.01	-0.14**	-0.12*	-0.04	-0.03	0.08	-0.11	-0.15**	0.05	-0.08	-0.08	-0.09
Potassium Intake	0.11	-0.05	-0.01	0.04	0.05	0.08	-0.10	-0.03	0.12*	0.04	0.00	0.03
ZincIntake	0.20**	0.05	-0.07	0.08	0.00	0.01	-0.01	-0.03	0.21**	0.12*	-0.01	0.08
IronIntake	0.17**	0.01	-0.12*	0.03	-0.03	-0.02	-0.13*	-0.07	0.17**	0.07	-0.09	0.01
Msgnessium Intake	0.06	-0.03	0.02	-0.01	0.04	-0.03	0.05	-0.04	0.04	0.02	0.00	0.01

PF-*Physical function,****RP-****Rolephysical,****BP-****Bodilypain,****GH-****General,****VT-****Vitality,****MH-****Mental health,****SF-****Socialfunctioning,****RE-****Roleemotional,****RH-****ReportedhealthTransition,****PHH-****Physical health,****MEH-****Mentalhealth,****HRQL-****Healthrelatedqualityoflife*

***-Correlationis significantatthe 0.01level*

**-Correlationis significantatthe 0.05level*

Specific Objective4

Todeterminetheeffectofchangingfoodcultureandhabitsonhealthrelatedqualityoflife of adults in Oyo State.

4.34: Pearsoncorrelationofnutrients adequacy

Table 4.34showsthecorrelationbetweennutrientsadequacy.Mostof the nutrientswere significantlyand positivelycorrelated with Calorie, except saturated, monounsaturated, and poly unsaturated fats,cholesterolandVitamin B6.ThosewhohadadequatePolyfatalsohad adequate Vit.B6($r=0.13, p<0.05$) and Sodium($r=0.13, p< 0.05$).Ina similar manner, respondentswho hadadequate vitaminC($r=0.13, p<0.05$), riboflavin($r=0.31, p<0.01$),niacin($r=0.1, p<0.05$), vitamin B6 ($r=0.18, p<0.05$), folate($r=0.15, p<0.05$), vitamin B12($r=0.33, p<0.01$), calcium ($r=0.32, p<0.01$), phosphorous ($r=0.40, p<0.01$),sodium($r=0.29, p<0.01$), potassium($r=0.28, p<0.01$), zinc ($r=0.35, p<0.01$) andmagnesium($r=0.20, p<0.01$).However, thosethathad adequate vitaminA hadinadequate amountsof thiamin($r=-0.14, p<0.05$), riboflavin($r=-0.17, p<0.01$),niacin($r=-0.18, p<0.01$),vitaminB6($r=-0.27, p<0.01$),folate($r=-0.14, p<0.05$),calcium ($r=-0.14, p<0.05$),phosphorous($r=-0.16, p<0.05$),sodium($r=-0.25, p<0.01$),andpotassium($r=-0.21, p<0.01$).Thistrendofpositivecorrelationsimpliesanindividualthathadaparticularnutrient inadequateamountwillhavetheothernutrientinadequateamount.ForInstance,respondents that hadcalciuminadequateamount,alsohadphosphorus($r=0.65, p<0.01$),sodium($r=0.82, p<0.001$), potassium($r=0.61, p<0.001$), zinc ($r=0.17, p<0.001$) andiron($r=0.18, p<0.001$) inadequate amount. Similarly,respondentswithadequatelevelof potassiumalsohadzinc ($r=0.18, p<0.01$), iron ($r=0.16, p<0.05$) andmagnesium($r=0.62, p<0.001$)in adequate amounts.

Table 4.34a: Pearsoncorrelationofnutrients adequacy

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Adequacy_calorie	1													
2. Adequacy_protein	0.80**	1												
3. Adequacy_cho	0.94**	0.65**	1											
4.Adequacy_df	0.29**	0.26**	0.33**	1										
5.Adequacy_fat	0.72**	0.67**	0.50**	-0.01	1									
6. Adequacy_saturatedfat	-0.03	-0.12	-0.05	-0.02	0.01	1								
7. Adequacy_mono fat	-0.03	-0.01	-0.04	-0.02	0.01	1.00**	1							
8. Adequacy_polyfat	0.02	0.04	0.01	0.06	0.02	0.93**	0.94**	1						
9. Adequacy_cholesterol	0.11	0.18**	0.04	0.03	0.13**	0.00	0.02	0.06	1					
10. Adequacy_vitA	0.44**	0.49**	0.32**	-0.16**	0.56**	-0.02	-0.02	-0.01	-0.03	1				
11. Adequacy_VitC	0.02	0.06	0.02	0.31**	-0.05	-0.05	-0.04	0.01	0.13**	-0.12	1			
12. Adequacy_Thiamin	0.30**	0.36**	0.33**	0.80**	0.04	0.00	0.01	0.08	0.09	-0.14**	0.25**	1		
13. Adequacy_Riboflavin	0.29**	0.37**	0.30**	0.78**	0.04	0.01	0.02	0.11	0.31**	-0.17**	0.25**	0.94**	1	
14. Adequacy_Niacin	0.29**	0.38**	0.30**	0.81**	0.03	0.01	0.02	0.11	0.15**	-0.18**	0.25**	0.96**	0.96**	1
15. Adequacy_VitB6	0.08	0.21**	0.05	0.52**	0.01	-0.02	-0.01	0.13**	0.18**	-0.27**	0.36**	0.55**	0.63**	0.70**
16. Adequacy_folate	0.30**	0.32**	0.34**	0.81**	-0.01	0.01	0.01	0.07	0.15**	-0.14**	0.21**	0.96**	0.94**	0.93**
17. Adequacy_VitB12	0.14**	0.32**	0.04	0.13**	0.18**	-0.01	-0.01	0.09	0.33**	0.03	0.15**	0.20**	0.26**	0.32**
18. Adequacy_Calcium	0.27**	0.18**	0.32**	0.52**	0.04	0.00	0.00	0.08	0.32**	-0.14**	0.28**	0.51**	0.59**	0.55**
19.Adequacy_Phosphorus	0.30**	0.41**	0.27**	0.68**	0.12	-0.01	0.00	0.11	0.40**	-0.16**	0.34**	0.81**	0.85**	0.87**
20. Adequacy_Sodium	0.17**	0.16**	0.21**	0.59**	-0.03	0.02	0.03	0.13**	0.29**	-0.25**	0.37**	0.53**	0.61**	0.62**
21. Adequacy_potassium	0.22**	0.28**	0.23**	0.54**	0.05	-0.03	-0.03	0.07	0.28**	-0.21**	0.60**	0.62**	0.66**	0.67**
22. Adequacy_zinc	0.30**	0.36**	0.27**	0.10	0.14**	0.01	0.01	0.07	0.35**	0.22**	0.00	0.09	0.21**	0.18**
23. Adequacy_iron	0.46**	0.37**	0.48**	0.17**	0.22**	-0.01	-0.01	0.03	0.08	0.10	-0.02	0.23**	0.23**	0.24**
24.Adequacy_magnessium	0.68**	0.54**	0.72**	0.57**	0.029**	-0.02	-0.01	0.06	0.20**	0.18**	0.27**	0.62**	0.61**	0.61**

Note:** Correlationissignificantatthe 0.01 level(2-tailed)

* Correlation issignificantatthe0.05level(2-tailed)

Table 4.34b: Pearsoncorrelationofnutrientsadequacycontinued

Variables	25	26	27	28	29	30	31	32	33	34
25.Adequacy_VitB6	1									
26.Adequacy_folate	0.45**	1								
27.Adequacy_VitB12	0.49**	0.13*	1							
28.Adequacy_Calcium	0.38**	0.55**	0.21**	1						
29.Adequacy_Phosphorus	0.74**	0.74**	0.56**	0.65**	1					
30.Adequacy_Sodium	0.53**	0.53**	0.26**	0.82**	0.67**	1				
31.Adequacy_potassium	0.70**	0.56**	0.42**	0.61**	0.82**	0.62**	1			
32.Adequacy_zinc	0.18**	0.11	0.35**	0.17**	0.29**	0.12	0.18**	1		
33.Adequacy_iron	0.11	0.24**	0.15**	0.18**	0.24**	0.14*	0.16*	0.25**	1	
34.Adequacy_magnessium	0.33**	0.59**	0.25**	0.48**	0.63**	0.38**	0.62**	0.39**	0.36**	1

Note:** Correlationissignificantatthe 0.01 level(2-tailed)
* Correlation issignificantatthe0.05level(2-tailed)

4.35: Correlation betweenage,BMI, eating styles andsubscales ofHRQL

Table4.35showsthecorrelationbetweenage,BMI,eating stylesandsubscalesof Health-RelatedQuality ofLife.MealSkippingandCultural/lifestylecorrelatednegativelywithage (r=-0.011,p<0.01;andr=-0.12,p<0.01respectively),thusolderrespondentsskipmealsless, andeatlessinaculturalstyle.Similarly,BMIcorrelatednegatively withSnackingand Convenienceeatingstyle(r=-0.12,p<0.01).EmotionalEatingcorrelatedsignificantly with Rolephysical(RP)(r=0.10,p<0.05)andbodily pain(BP)(r=0.10,p<0.05)subscalesofthe Health-relatedQuality ofLife.TheGeneralHealthsubscalecorrelatedsignificantly with Lowfat eating (r=0.14, p<0.01), Emotional eating (r=0.18, p<0.01), planningahead(r=0.08, p<0.05),andcultural/lifestyle behaviour(r=0.17,p<0.01).Thesepositivecorrelations indicatethatthosethatpractiseany ofemotionaleatingstyle,planningaheadstyle,and cultural/lifestyle behavioureating stylewilldowellonthegeneralhealthsubscale.Thisis similartotheRH(reportedHealthtransitionsubscale) thathadapositive(andsignificant) correlationwithallthesubscalesofHRQL.RoleEmotional(RE) subscale hadanegative correlation with Meal skippingeatingstyle (r=-0.09, p<0.05).

Table 4.35:CorrelationbetweenAge, BMI, eating styles andsubscales ofHRQL

Variables	Age	BMI	PF	RP	BP	GH	VT	MH	SF	RE	RH	PHH	MEH	HRQL
Age	1.00													
BMI	-0.27**	1.00												
Lowfateating 2	-0.02	0.08	0.05	0.06	0.12**	0.14**	0.09*	0.04	0.02	0.06	0.11**	0.10*	0.08	0.11**
Snacking and convinience2	-0.07	-.12**	.14**	0.05	-0.01	0.03	-0.01	-0.04	0.07	0.02	0.17**	0.09*	0.01	0.07
Emotionaleating2	-0.05	0.03	-0.04	0.10*	0.10*	0.18**	0.16**	0.23**	0.28**	0.10*	0.14**	0.09*	0.26**	0.18**
Planningahead2	-0.05	-0.05	0.01	0.06	0.06	0.08*	0.07	0.07	0.16**	0.04	0.13**	0.06	0.11**	0.09*
Mealskipping2	-.011**	0.07	-0.04	-0.07	-0.04	0.01	0.02	0.02	0.10*	-0.09*	0.11**	-0.05	0.01	-0.02
Cultural / Lifes tyle Behaviour2	-0.12**	-0.02	0.00	0.01	0.08	0.17**	0.09*	0.12**	0.14**	0.01	0.12**	0.07	0.12**	0.10*

PF-*Physical function,****RP-****Rolephysical,****BP-****Bodily pain, GH-General,****VT-****Vitality,****MH-****Mental health,****SF-****Socialfunctioning,****RE-****Roleemotional,****RH-****ReportedHealthTransition,****PHH-****Physical health,****MEH-****Mentalhealth,****HRQL-****Healthrelatedqualityoflife*

***-Correlationis significantatthe 0.01level*

-Correlationis significantatthe 0.05level

4.36. Correlation betweeneating styles

Table4.36belowshowsthecorrelationbetweendifferentstylesofeating.Alltheeatingstyles hada significantcorrelationwith eachother($p<0.01$). Thecorrelationswere positive andin mostcaseshigh($r>0.5$).ExceptforthecorrelationbetweenLowfateating styleandother eating styles,thecorrelationcoefficientswerewellabove0.4.Respondentswhoatelowfat alsotendtosnackmore($r=0.34, p<0.01$),atemoreemotionally ($r=0.25, p<0.01$),Planning aheadeating ($r=0.44, p<0.01$),Skipping Meal($r=0.35, p<0.01$)andCultural/Lifestyleeating ($r=0.30, p<0.01$).Thosethatskipmealsalsotendtoeatinacultural/lifestylemanner($r=0.44, p<0.01$)

Table 4.36: Pearsoncorrelation betweeneating styles

Variables	1	2	3	4	5	6
1.Lowfateating2	1.00					
2.Snackingand convenience2	0.34**	1.00				
3.Emotionaleating2	0.25**	0.55**	1.00			
4.Planningahead2	0.44**	0.64**	0.53**	1.00		
5.Mealskipping2	0.35**	0.56**	0.52**	0.45**	1.00	
6.Cultural/LifestyleBehaviour2	0.30**	0.56**	0.59**	0.55**	0.44**	1.00

Note:** Correlationissignificantatthe 0.01 level(2-tailed)
* Correlation issignificantatthe0.05level(2-tailed)

4.37. Association betweenhealthrelatedquality oflifeandsocioe-conomic variables

Table4.37showstheassociationbetweenHealth-RelatedQuality ofLifeandSocio-economic variables.TheassociationbetweentheType ofhousethe respondentslivedand theirhealth-relatedquality oflife wassignificant($p<0.05$).However,respondentswholived inotherscategory ofhouses(e.g.facemeI faceyou)haveahigherproportion(89.50%)of themwithgoodquality oflifethanFlatwithbedrooms(79.40%),Self-contained(81.50%), or Aroom (89.0%).Inasimilar manner,the Main sourceofcooking fuelcategory($p<0.05$), Incomecategory ($p<0.001$),Totalhouseholdcategory ($p<0.001$)weresignificantly related withhealth-relatedquality oflife. RespondentswhousedAlternativesourcesofelectricity (e.g.solar,generator) reportedahigherproportion(89.0%)having agoodhealth-related quality oflifethanthoseusingPublicpowersupply (e.g.PHCN)(79.9%),Candle/lantern (87.4%) orNo sourceofelectricity(77.8%).

Table 4.37: Association betweenhealthrelatedquality oflifeandsocio-economicvariables

Health Related qualityofLife **Variable**	Good	Poor	**Chi-square**	**P**
Income category				
<10,000	302(89.1)	37(10.9)	14.404	0.001
10,000 – 49,000	163(79.9)	41(20.1)		
≥50,000	23(69.7)	10(30.3)		
Totalhousehold category				
≤6	383(88.20)	51(11.8)	17.46	<0.001
>6	107(73.80)	38(26.2)		
House ownership				
No	126(79.70)	32(20.3)	3.34	0.068
Yes	327(86.1)	53(13.9)		
Type ofhousecategory				
A room	89(89.0)	11(11.0)	9.23	0.026
Self-contained	101(81.50)	23(18.50)		
Flatwithbedrooms	100(79.40)	26(20.6)		
Others (e.g. facemeIfaceyou)	196(89.50)	23(10.5)		
Mainsourcedrinkingwater category				
Surface/rain water	130(87.80)	18(12.20)	3.199	0.362
Well	106(80.90)	25(19.10)		
Borehole	204(85.4)	35(14.60)		
Others	52(81.20)	12(18.80)		
Mainsourceofcookingfuel category				
Wood	255(86.7)	39(13.3)	10.526	0.015
Charcoal	97(89.8)	11(10.2)		
Kerosene	130(78.3)	36(21.70)		
Others	6(66.70)	3(33.3)		
Main source of lighting category				
None	14(77.8)	4(22.2)	7.358	0.061
Candle/lantern	209(87.4)	30(12.6)		
Public power supply(e.g. PHCH)	179(79.9)	45(20.1)		
Alternativesources(e.g.solar, generator)	89(89.0)	11(11.0)		
Toiletfacilityin household				
None(e.g.openbush,surface water	405(86.2)	65(13.8)	5.734	0.057
Pitlatrine	54(80.6)	13(19.40)		
Watercloset	34(73.90)	12(26.1)		
Refuse management in household				
None	460(85.0)	81(15.0)	2.09	0.352
Burning	16(84.2)	3(15.8)		
Cityservice	17(73.9)	6(26.1)		
Quintile 3levels				
Poor	203(86.8)	31(13.2)	0.52	0.97
Average	105(89.0)	13(11.0)		
Rich	185(80.10)	46(19.9)		

4.38: Association betweenhealthrelatedquality oflifeandsocio-demographicvariables

TheassociationbetweenHealth-RelatedQualityofLifeandSocio-demographicvariablesis showninTable4.38.More male respondents(85.40%)reportedhavinggoodhealth-related Qualityoflifethanthefemalerespondents(83.9%).Interestingly,respondentswithaTertiary levelofeducation(33.3%)reported havingapoorhealth-relatedquality oflife muchmore thanrespondentswithsecondary(20.8%),primary (14.0%)ornoeducation(12.9%).Thisis similartoamaritalstatuswheretheproportionofDivorced/separatedrespondents(96%)that hadagoodhealth-relatedquality oflifewasmorethanthatofwidowed(92.6%)orMarried (81.8%)respondents.Thisassociationbetweenmaritalstatusandhealth-relatedqualityoflife issignificant($p<0.05$), aswellasthatof Age($p<0.05$),Education($p<0.05$) andReligion ($p<0.05$).

Table 4.38: Association betweenHealthRelatedQuality ofLifeand Socio-demographicvariables

Health Related qualityofLife				
Variable	Good	Poor	**Chi-square**	**P**
Age group				
<50 years	96(73.8)	34(26.2)	19.90	<0.001
50 – 70	236(84.60)	43(15.4)		
>70 years	161(92.5)	13(7.5)		
Sex				
Male	211(85.40)	36(14.60)	0.244	0.621
Female	282(83.9)	7(16.1)		
Maritalstatus				
Married	356(81.8)	79(18.2)	10.97	0.004
Divorced/separated	24(96)	1(4)		
Widow	112(92.6)	9(7.4)		
Type of marriage				
Monogamy	241(82.8)	50(17.2)	0.268	0.3
Polygamy/polyandry	243(86.2)	39(13.8)		
Education category				
None	317(87.1)	47(12.9)	13.456	0.004
Primary	98(86.0)	16(14.0)		
Secondary	42(79.2)	11(20.8)		
Tertiary	28(66.7)	14(33.3)		
Occupation category				
None	40(95.2)	2(4.8)	8.47	0.076
Trade/business	236(82.2)	51(17.8)		
Farmers	142(88.8)	18(11.2)		
Civilservants	16(76.2)	5(23.8)		
Artisans	56(82.4)	12(17.6)		
Religion category				
Christian	245(89.7)	28(10.3)	12.47	0.002
Islam	234(80.4)	57(19.6)		
Others	5(62.5)	3(37.5)		

4.39: Binary logistic regressionof health related quality oflifeand significant socio-economicandsocio-demographic variables

Table4.39showstheresultofthebinary logisticregressionofhealth-relatedqualityoflife onselectedsocio-demographicandsocioeconomicvariables.Theselected variables were the onesthatwere significantlyassociatedwithHealth-relatedQualityoflife inTables4.32and 4.33above.Althoughnotsignificant,thosewith tertiary educationwereabout2timesmore likely tohaveapoorquality oflifethanthosewithnoeducation(OR=1.739,P=0.199).

However,AgehadasignificantassociationwithHealth-relatedquality oflife(OR=0.962, P<0.01), showingthatasone advancein age, suchis likelyto haveapoor qualityof life.

Table 4.39: Binary LogisticRegressionofhealthrelatedquality oflifeand significant socio-economicand socio-demographic variables

			95%C.I.forOR	
	OR	**P**	**Lower**	**Upper**
Religion				
Others(ref)				
Christian	.248	.090	.050	1.243
Islam	.527	.432	.107	2.602
Marital Status				
Married(ref)				
Divorced/Seperated	.242	.172	.032	1.856
Widow	.571	.179	.252	1.292
Education				
None(ref)				
Primary	.635	.199	.318	1.270
Secondary	.745	.490	.323	1.719
Tertiary	1.739	.199	.748	4.045
Age	.962	.001	.941	.984
Constant	5.471	.115		

4.40. Association betweeneating behaviourandsocioeconomicvariables

Houseownership($p<0.001$), Main sourceof lightingcategory($p<0.05$)and Quintile (wealth Index) ($p<0.05$) hada significantassociationwitheatingbehaviourasshown inTable4.40.

Respondentswhoearnedmorethan₦50,000/monthhadthehighestproportionofpeoplewith goodeating behaviour(91.2%). Waterclosetusershadahigherproportion(89.4%)of respondentshavinggoodeating behaviourthanthosewithnotoiletfacility.However,those withnosourceofelectricity hadahigherproportion(100%)havinggoodeatingbehavior thanthosethatusecandle/lantern(82.4%),publicpowersupply (e.g.PHCN)(89.4%),or alternative sources(e.g.solar,generator)(84.2%).Average familiesreportedhigher proportions(19.3%)havingbadeatingbehaviourthanPoor(17.0%)orRichfamilies(8.2%). Thetablealsoshowedthattheproportionofnutritionally healthy tenants(95.60%)were significantlyhigher thanthe percentageof nutritionallyhealthyhouseowners (81.9%).

Table 4.40. Association betweeneatingbehaviour and socio-economicvariables

EatingBehaviour **Variable**	Good	Poor	**Chi-square**	**P**
Income category				
<10,000	289(85.3)	50(14.7)	0.944	0.624
10,000 – 49,000	178(86.4)	28(13.6)		
≥50,000	31(91.2)	3(8.8)		
Totalhousehold category				
≤6	378(86.50)	59(13.5)	0.088	0.766
>6	124(85.50)	21(14.5)		
House ownership				
No	153(95.60)	7(4.4)	17.61	<0.001
Yes	312(81.9)	69(18.1)		
Type ofhousecategory				
A room	87(86.1)	11(11.0)	0.126	0.989
Self-contained	108(85.0)	19(15.0)		
Flatwithbedrooms	108(86.4)	17(13.6)		
Others (e.g. facemeIfaceyou)	188(86.20)	30(13.8)		
The mainsource of drinking water category				
Surface/rain water	123(82.60)	26(17.40)	2.403	0.493
Well	115(87.10)	17(12.9)		
Borehole	210(87.9)	29(12.10)		
Others	55(84.60)	10(15.40)		
The mainsourceofcookingfuelcategory				
Wood	252(85.7)	42(14.3)	3.736	0.291
Charcoal	89(82.4)	19(17.6)		
Kerosene	150(88.8)	19(11.2)		
Others	9(100.0)	0(0)		
The mainsource oflighting category				
None	18(100)	0(0)	7.874	0.049
Candle/lantern	197(82.4)	42(17.6)		
Public power supply(e.g.PHCH)	202(89.4)	24(10.6)		
Alternative sources (e.g. solar, generator)	85(84.2)	16(15.8)		
Toiletfacilityin household				
None (e.g. open bush, surfacewater	402(85.5)	68(14.5)	0.579	0.749
Pitlatrine	60(87.0)	9(13.0)		
Watercloset	42(89.4)	5(10.6)		
Refusemanagementin the household				
None	467(85.8)	77(14.2)	0.219	0.896
Burning	17(89.5)	2(10.5)		
Cityservice	20(87.0)	3(13.0)		
Quintile 3levels				
Poor	195(83.0)	40(17.0)	11.097	0.004
Average	96(80.7)	23(19.3)		
Rich	213(91.8)	19(8.2)		

4.41. Association betweeneating behaviourandsocio-demographic variables.

InTable4.41theassociationofsocio-demographicvariableswitheatingBehaviourisshown. Education($p<0.05$) andOccupation($p<0.05$) hada significantassociationwitheating behaviour.Theassociationofothersocio-demographicvariableswitheating behaviourwas notsignificant;therespondentsgenerally showedthatthey hadgoodeatingbehaviour.The proportionofmales(88.0%)thathadgoodeating behaviourwasmorethanthatoffemales (84.5%). However, morefemale(15.5%) than Male (12%) amongmarriedpeople (86.7%) reportedhavinggoodeating habitthandivorced(84.6%)orwidowedrespondents(84.3%). Morerespondents(17.9%)withnoeducationreportedhavingbadeatingbehaviourthanthose with primary(8.5%), secondary (7.4%) ortertiary (4.8%)education. On thecontrary, respondentswithnoeducationhadthe lowestproportion(82.1%) amongthosewithgood eatingbehaviour, while respondents with tertiary education had thehighest proportion (95.2%) amongthose with good eatinghabits.

Table 4.41: Association betweeneatingbehaviour andsocio-demographic variables

EatingBehaviour				
Variable	Good	Bad	**Chi-square**	**P**
Age group				
<50 years	120(91.6)	11(8.4)	4.75	0.093
50 – 70	241(85.20)	42(14.8)		
>70 years	143(83.1)	29(16.9)		
Sex				
Male	220(88.0)	30(12.0)	1.439	0.230
Female	284(84.5)	52(15.5)		
Maritalstatus				
Married	379(86.7)	58(13.3)	0.521	0.771
Divorced/separated	22(84.6)	4 (15.4)		
Widow	102(84.3)	19(15.7)		
Type of marriage				
Monogamy	255(87.0)	38(13.0)	0.073	0.788
Polygamy/polyandry	245(86.3)	39(13.7)		
Education category				
None	298(82.1)	65(17.9)	12.369	0.006
Primary	107(91.5)	10(8.5)		
Secondary	50(92.6)	4(7.4)		
Tertiary	40(95.2)	2(4.8)		
Occupation category				
None	32(76.2)	10(23.8)	9.998	0.04
Trade/business	242(84.0)	46(16.0)		
Farmers	141(87.6)	20(12.4)		
Civilservants	20(95.2)	1(4.8)		
Artisans	65 (94.2)	4(5.8)		
Religion category				
Christian	236(85.8)	39(14.2)	0.913	0.633
Islam	253(86.6)	39(13.4)		
Others	6(75.0)	2(25.0)		

4.42: Binary logistic regressionofeating behaviouronsignificant socioe-conomic andsocio-demographic variables

Theresultsofthebinary logisticregressionofeating behaviourlifestyleonselectedsocio-demographicandsocio-economic variables areshowninTable4.42.Variablesthatwere significantly associatedwitheatingbehaviourlifestyleinTables4.35and4.36abovewere selectedandincludedinthelogisticregressionmodel.Onlyhouseownershipwasstatisticall y significant in the logistic regression model. Thosewhoown houses were about 4 times more likelyto havepoor eating behaviour than thosewith no houses (95% CI: 1.813, 9.419).

Table 4.42: Binary logisticregressionofeatingbehaviour onsignificant socioe-conomicandsocio-demographic variables(95%CI)

	OR	P	Lower	Upper
Occupation				
None(Ref)				
Trade/Business	1.018	0.967	.441	2.352
Farmers	.633	0.326	.254	1.577
Civil Servants	.541	0.611	.051	5.787
Artisans	.397	0.163	.108	1.454
Education				
None(Ref)				
Primary	.707	0.373	.330	1.516
Secondary	.784	0.678	.248	2.475
Tertiary	.511	0.431	.096	2.710
House ownership				
No(Ref)				
Yes	4.132	0.001	1.813	9.419
QUINTILE_grp				
Poor (Ref)				
Average	1.092	0.778	.592	2.015
Rich	.562	0.096	.286	1.107
Constant	.087	0.000		

CHAPTERFIVE

DISCUSSION, CONCLUSION, AND RECOMMENDATION

5.1 DISCUSSION

5.1.1 Changes in foodhabits ofadults inOyo State

Oneofthemajorobjectivesofthisstudy istoidentifythechangesinthefoodhabitsofthe adultpopulationinOyostate.Thefindingsclearlyshowedthattheeatinghabitofthepeople is no longeras healthyastheyused to be. Thefocusgroupdiscussion with the adultpopulation studiedrevealedthattheeffectofurbanization,modernization,andwesterndietontheadults studiedfood habitcannotbe overemphasized. Some of the discussantslamented the gradual erosion ofthe traditional/ indigenous diets due to thepreferenceforthe ready-to-eat foods in themarket.Itwas gatheredfromthestudythatcaregiversnolongerknowhowthetraditional foodswerepreparedanditwaspointedoutbysomefemaleparticipantsthatoldendaysfoods preparedandeatenwerehealthierthanthepresentdayonesbecausemostofthefarmproduce hadlosttheir palatability,aroma aswellastheir nutritionalvalues.

Thesewereattributedto the use of fertilizers insteadof bushfallowing,herbicidesinsteadof weedingthatenrichthe soil, Maggi in lieu of locust beans andgrindingmachine instead of theusual grindingstone. Accordingtooneof thewomen discussantsinanurbancommunity,“Theolden days'crop processingmethodsespecially planting wasquitedifferent.MostPresentday cropsare plantedwithchemicalsandfertilizerthereby resultinginearly maturingandharvestingof foodcrops”.Thiswascorroboratedby otherrespondentswhoexplainedthat“Vegetables withoutfertilizer taste good and palatable than theones grown with fertilizer”.

Also“Inthepast,weused‘ewedu’butitisdifferentnow;thereasonisthat,thewayweplant ‘ewedu’thesedaysaffectitsqualitybecausewareencouragedtoaddsomechemicalstothe soilbeforeplantingoreven afterplanting.Bythetime wecook such ‘ewedu’, it would have lostitssliminess.Henceagreatdifferenceexistsbetweenthe‘ewedu’plantedwithorwithout chemicalsbecausethelatterwillbeverygreenishthantheformer.Evenmostvegetablesand othercropssuchasyam,cassavaareplantedwithchemicals.Inthetimepast,thereisnosuch thing”(Amiddle-agedfemaleparticipant,Iganna).

Inallthe communities sampled, respondentshadagood breakfastattitude. Also, skipping lunchwasnotacommonattitudeandnutritionally richfoodcontainingacombination of carbohydrate,proteinandvitaminssourceswerecommonly chosenforlunch.Suchfoodfor lunch includes;‘amala’ (made of eitheryamflouror cassava) withsoup(‘morogbo’, ‘ilasa’ [okro leaves],vegetables[‘efo tete abalaye’]or ‘egusi’ [melon]withvegetables);pounded yamwithsoup;meatandbeans.Itwasalsonotedthatthecommonvegetablesinthepastand thepresentare‘efoteteabalaye’,‘ewuro,‘igbo’,‘eku’‘efotete’,‘shoko’and‘ebolo’.Asone of thefemaleparticipantspointed out,

“Some people if chancedcan poundyam, some cook beans but majorlyweeat ‘amala’(yam flour) and‘ilasa’ soupwhich containslocustbeansanduptilldatewedon’tuse Maggifor draw soup instead weuselocust beans.When ‘ilasa’ is eaten bysomeonethat had justgiven birth,itnourishedher body.Butnow we use Maggifor stew althoughinthe olden daysour mothers used leafyonions and locust beans for stew”.

Dinneriseateninallthecommunitiesalthoughitscontentvariesfromonecommunity to another.‘Ekotutuwithmoinmoin/akarapounded yam,riceandspaghettiwerecommonfood itemsareeatenasdinneralthoughthisislargelydependentoneachfamily’seconomicpower and ability.It was furtherstressed that poundedyam was oneof themajormeal fordinnerin the time past,however, it’s nolonger a commonfood for dinner because

theyouthof today who aresaddled with theresponsibilityof preparingthe meal cannot poundyam.

Accordingtosomefemalediscussantsintheurbanareas,someofthemodernfoodscommon inthecommunity andconsumedmostly bychildrenarecannedfoods,noodles,rice, Spaghetti, Semovita, andwheat.Itwasalsomentionedthatchildrenweremade toeatfruits and vegetables in addition to thesemodern foods. Varioustypeoffruitssuchas;mango,cashew,orange,pineapple, pawpaw, banana,and plantainwasmentionedtobe commoninmostof the indexurbancommunities.

However, findingsdidindicatepoortasteandaroma,non-availabilityandunaffordabilityaskeyreasons for thedeclineinfreshfruitconsumption,hencetheincreasing incidenceofNon-communicablediseases,unlikeintheoldendayswhensuchdiseaseswere notthingsof concern.Thiswas emphasizedbyoneofthe femaleparticipantsin anurban communitywho didconfesstotheunaffordabilityofthefruitsthesedays“Butwedon’t haveaccesstofruits likebeforeduetonon-availability andcost.Wehavetobuy itfromafewpeoplethatare planting itontheirfarms.Evenifourhusbandgoestothefarmandbringsfruitsinsteadof givingitoutfreely weselltomakemoney.Unlikebeforethat,wehadfruitsonindividuals’ farm, it is scarcetodayand so, we consumefewerfruits.”

Locally raisedchickenandfishwerereportedtoberegularly consumedby thefocusgroup discussants.Intimepast,bushmeatandfreshwaterfisheswerereportedlycommonand consumed, butbeef andfrozen fish suchasMackerels,Titusand Sardine arethe most commonspeciesavailable nowadays.Changesinthemeatconsumptionpattern betweenthe oldendaysandthepresenttimearelargely duetothehighprevalenceofwesterndietsand reductioninthepopulationofgameskilled asbush meat;resultinginthe highcostof bushmeat.Inaddition,concernwasraisedonthequalityoffishbeingproducedinthepresent day,pointing outthatmostofthespecies offishraisedaregenetically modifiedwitha consequent reduction in their qualityand taste.

Eating of‘ewedu’ wasconsideredatabooinoneofthecommunitiesasitwasbelievedor perceivedtocausefibroid.Inanotherurbancommunity,eating of‘eba’wasnotcommon although theirchildren do soak ‘gaari’in water to eat. Somefemaleparticipantsintheurbancommunitiessuggestedwaysofimproving eating culture throughnutritioneducationwhichcouldbeorganisedfor women ofdifferentgroups and in different communities. Accordingto one oftheseparticipants, “You canorganise nutritioneducation andcreateawarenessamong women fromdifferent groupsandcommunity.Thisinformationwillbedisseminatedamongustothosewhodonot attend becauseitwillhelpus to changeoureating habitand cookingpattern forbetter”

5.1.2 The Influence ofsocio-demographic and household characteristic onrespondents’foodhabit

Generally,a larger proportionof bothruralandurbandwellerswerefemale.More females live inruralareaswhile larger percentagesof the urbandwellers(IbarapaLGA)were male.Thismay beduetothefactthatwomenaremoreinvolvedinfarmingandagro-processingandtradingactivitieswhicharepredominantoccupationsinruralareasofNigeria . Ogunlela(2009)hadsimilarfindingswhenheopinedthatruralwomen,morethantheirmale counterparts,tooktheleadinagriculturalactivities,makingupto60-80percentofthelabour force.Itisironicalthattheircontributionstoagriculture andruraldevelopmentare seldom noticed.

Generally,therespondentswereagedbetweenfifty (50)and(70)years.Thereasonforthe agedistributionintheruralareaisnotfar-fetched-itcouldbeduetothefactthatmoreyouth migrantsinurbancentresthantheelderly.OfuokuandChukwuji(2012)revealedthatthe rate of migrationfrom ruraltourbancenters wascommonamongages11-20and21-30. Therefore,about60% oftheproductiveyouthsinruralareasmigratetourbancentres. Thus,theyouthswhoarethemostproductivegroupofpeopleinruralareasmigratetothe urbancentreleavingbehindtheelderly(above50 years)andthechildrenwhoareabout40% of thetotal population in therural areas.

Findingsalsorevealedthathigherpercentagesofthepeopleinbothruralandurbanareeither poorlyeducatedorhadnoformaleducation.Thismaybetraceabletopooracademicfacilities

, poorenlightenmentaswellaspooraccesstoformaleducationintheareas.Morethanhalfof urbanresidentsinthethreeLGAs,Atiba,Ibarapa,andIwajowaweretraders.Inasimilarway, mostrural residents were farmersexcept forIwajowaLGAwhich had halfofits residents as traders. This findingis similarto that of Ogunlela(2009).

The mainreligionpractisedinAtibaLGA isIslamwhileIbarapa recordedmore Christians thanother religions.InIwajowaLGA,however,a larger proportionofurbanresidents practiceIslamwhileamajority oftheruralresidentswereChristians.Thisfindingisinline withthatof Olowookere*etal*.,(2012) who reported a similar trendinreligiondistribution amongruralcommunitiesofNigeria.Theimplicationisthat traditionalreligionisgradually fading awayfrom where itwas formallybeingpractised.

Educationandoccupationweresignificantly associatedwitheating behaviour(Table4.79). Theassociationofothersocio-demographicvariableswitheating behaviourwasnot
significant;therespondentsgenerallyshowedthattheyhadgoodeatingbehaviour.Therewa s
nosignificantdifferenceintheproportionofmalesandfemalerespondentsthathadahealthy eating habiteventhoughmoremalesseemtoeathealthierthanfemales.Thefindingsalso revealedthatagoodeatinghabitcanbeinfluencedby maritalstatus.Thestudy showedthat alargerpercentageofthemarriedrespondentsreportedagoodeatinghabitthanthedivorced orthewidowed.Thiscanbetracedtothesupportthatthemarriedcouplesgetfromeachother intheformsoffinance,encouragement,andmotivationwhichthedivorcedandthewidowed may notbeabletoaccess.Theroleofeducationinenhancingagoodeating habitcannotbe overlooked.Thestudy revealedastatistically significant($p<0.001$)pooreatingbehaviour amongtherespondentswithnoformaleducationasagainstthosewithprimary,secondaryor tertiaryeducation.

Theresultsofthebinary logisticregressionofeatingbehaviourlifestyleonselected socio-demographicand socioeconomicvariables areshown in Table 4.79

5.1.3 Influenceofsocio-economic characteristics onrespondents'foodhabits

Mostoftherespondentsreportedthatthey wereself-employed,regardlessofthelocality of theirresidence.InIbarapaLGAforinstance,94.3%ofitsruralresidentswereself-employed. Okoli *et al*., (2014) had asimilar resultwhereitwas reported that amajorityof peoplein theruralcommunityofNigeriawereself-employed.Thismaybeasaresultofthelocalization of infrastructurefacilitiesin the citieswhich has, in turn, restricted the employer oflabour to theurbanareas.By implication,industries,andwhite-collarjobsproviderscannotfindthe enablingenvironmentintheruralareasofNigerialeaving theruraldwellerswithnoother options than to engagein farming, trading,andafew artisans' works.

Respondentsin Ibarapa andIwajowaweremajorlylow-incomeearners. Amongurban dwellersinIbarapaLGA,about66.4%oftherespondentsearnlessthan₦10,000(US$62.50) permonthwhichisnotdifferentfromthetrend(55.6%)observedamongtheruraldwellers inthesameLGA.Thepresentstudy confirmstheresultofOnuetal.,(2010)where itwas reportedthat57.8%ofthe respondentsearnedlessthanN10,000.00(US$62.50)a month which madeitdifficult for them to afford decent houses.

InalltheLGAs,lessmoney isspentonfood.Mostoftherespondentsacrossallstratainall the LGAsreportedspendinglessthan₦10,000amonthonfood.Thisissobecausetheyearn lessthan#10,000andtheycan'tspendmorethantheirincomeandalsobecausetheygetmost oftheirfoodfromthefarm.ThepresentfindingssupportthatofImoetal.,(2013)whoaffirms that 66.3%of therespondents earn less than #10,000 in a month.

5.1.4 Householdcharacteristics

Mostof the respondentsinthethreeLGAsof Atiba,Ibarapa,andIwajowahadahousehold sizethatconsistedoflessthanorexactlysix(6)members.Theimplicationisthatmoreofthe respondentsoperateanuclearfamilytypewhichisatrendthatispeculiartotheurbancenters. AkewusholaandAkinlabi(2013) hadsimilarresultswhererespondentswith4-6household sizehad 30.0%which was the highest.

Mudwasthemainmaterialusedinmostoftherespondents'houses,amajority ofthe respondentslivedinmud/mudroof type ofhouses.Asimilar result was reportedina survey carriedoutinJigawastateNigeria. In theUrban area ofAtibaLGA,

amajorityofthehouses inwhichtherespondentslivedwerebuiltwithconcreteblocks.Manyoftheruralresidents inAtibaLGAusedsurfacewaterastheirmainsourceofdrinkingwater.Also,urbanresidents inIwajowa LGAusedwellwatermostlyastheirmainsourceofdrinkingwater.Theresultof Tasi*etal.*,(2016)issimilartothepresentstudy whereitwasreportedthatopenwellisthe commonsourceofwaterintheruralvillagesofKano.FatioyeandJohn-Adewole(2013)also reportedthatthemajorsourceofpotablewaterinthecommunity ishand-dug well;someof which was not havingagood depth to avoid seepageof contaminants intoit.

Mostruralareashadalowproportionofitsdwellersusingpublicpower;revealing thefact thatmostruralareasdonothaveaccesstopublicpower. Lackofthisbasicamenityhasbeen a factorimpedingthe growthanddevelopment ofruralareas.Regardlessofthelocality,all theLGAs reporteda higher proportionof itsdwellerswithnotoilet facilities.Thisisthe situationwithmany ruralhouseholdsindevelopingcountries.Ahighproportionofthe respondentsreportednothavinganyformofrefusemanagement,meaningthattherewasno properway ofdisposingofwasteinthestudy areas.FatioyeandJohn-Adewole(2013) recordedsimilarfindingswhenthey reportedthatthelittleknowledgethatthecommunity occupantshadabout environmental and wastemanagement andcontrol was inadequate; hence, the poor environmental management.

5.1.5 Foodconsumption patternofrespondents

Morethanone-thirdoftherespondentsdidnotconsumegarriatall,whileonlya fewconsumed itonce inaweek,which isthe highestproportionof those whoate*garri*atall.Onyemauwa (2010) reportedsimilar findingswhereheaffirmedthatanaveragehouseholdof 8persons consumed 25kilograms (kg)of garriat acostofN2,500 representing 5%ofmonthly householdincome.Majorityofrespondentsreportednotconsumingcookedorfriedcocoya m andsweetpotatoes.Thisfinding isatvariancewiththefindings ofAgbelemoge(2013)who reported almostallrespondentsconsumedcocoyamin South-westernNigeria aspartof the familymenu.

Tuwomasara,Kokoro,SapalaAbariandIro werenottakenatallby alargerpercentageof therespondents.Thisisbelievedtobeduetothefactthatthesetraditionalfoodsarenolonger

relishedbytheindigenouspeople,andthewomenmay notknowhowtocooktheproducts. Tuwomasaraispopularlyconsumedinthenorthernpartofthecountryandisnottoocommon in theSouth-west, except wheretheHausasareliving.

Fried Rice and Tuwo Shinkafawerenot eaten at all byalargeproportion oftherespondents. Thisisbelievedthatthese foodsarenottraditionaltothem,unlikewhitericewhichwas consumed regularlybytherespondents.Akarakoko,Ekuru,andGbegiriwhicharetraditionalfoods ofthe Southwestregionof Nigeriawerenotconsumedatallbyalargepercentageofrespondents.Apossibleexplanation forthisobservationmaybeduetothefactthattherespondentsmaynothavebeenconsuming thesefooditemsorthefooditemsmightbetime-consuming inpreparation.Aboutone-third oftherespondentsrarelyconsumebiscuitsandconfectionaries.Thereasonforthismaybebe causeBiscuitsandConfectionarieswereknowntobefooditemsconsumedbychildrenand not adults.Coffeewas not consumed atallbymostrespondents, while othersrarelytook beverages and tea.

Thepresentfindingsshowthatrespondentshadlittleornoinformationonthebenefitsof coffeeto human health.Fruitslikeguava,watermelon,apple,pear,andcarrotwerenoteatenatallby many ofthe respondents.Thismaybeduetorespondents'lackofaccesstothesefruits,mostofwhichare seasonal and not readilyavailable.Leafyvegetableswereconsumedoncedailybyone-thirdoftherespondents,while28.4%did notconsume vegetablesatall.Thepresentfindingsagree withElodieandYves(2010) who reportedthatthedietsofurbanpopulationsweregrossly deficientinmicronutrientssuchas vitamin A.

Morethanhalfoftherespondentsdidnotconsumejuiceatallwhileothersconsumeditrarely. Thismay beduetothefactthatthejuicesweremoreexpensiveandtherespondentscould not afford itcomparetoother carbonated drinks.Amajorityoftherespondentsdideatmeatregularly withtheirmeals,while61.3%didnot

haveaplanformealsaheadoftime.About47.0%oftherespondentsdon'teatuntiltheyhave finishedthewholepackagewhenthey buysnackfoods,while66.5%don'treplacesupper withasnack,instead ofplanning meals.Outoftherespondents,79.1%didn'tagreetohate cooking.Theimplicationofthesefindingsisthatrespondentswereawareoftheconsequence s of eatingmeatless meals.Itcouldalso beinferredfrom thepresentfindingsthat respondents do not seethe reason whytheyhad to plan theirmeal forthecomingweek.

5.1.6 Relationshipbetweensocio-demographicandsocio-economicvariables,nutrient adequacy andnutritional status ofadults

Oneofthemajorobjectivesofthisstudywastoassesstherelationshipbetweenrespondents' nutritionalstatusandtheirsocio-demographicandsocio-economic status.Itwasobserved fromthestudy thatnutrientinadequacywasacommonchallengetothemajority ofthe respondentsin bothruraland urban areas. VitaminB6 inadequacywashigheramong individualsinmonogamousmarriages(97.0%)thanthoseinpolygamousmarriages(94.5%).

TheproportionoffarmersandCivilservantswithB6inadequacywasthesame(6.70%)while theyequally sharedthesameproportionofexcessamountsofvitaminB6(2.70%).These inadequaciesmaybeduetothecomplaintsthatfruitsandvegetablesarenolongerpalatable astheyusedtobeandmore,thatthefewavailablefruitsthesedaysaretooexpensiveforboth ruralandurbandwellerstoaffordaspointedoutduringthefocusgroupdiscussion.However, thesimilartrendin theproportionwithexcessvitaminB6among farmersandcivilservants couldbe attributabletothefarmers' better accesstomore vegetablesandthecivilservants better understandingof theimportanceas wellasthe available sources of thevitamins.

Therewasnosignificantdifferenceinthelevelofadequacy offolateamongthegenders. However, a muchlarger percentage of therespondentsshowedfolateinadequacy.This inadequateleveloffolatesreportedamongrespondentsbythepresentfindingsmaybedue tolackofaccesstofoodsourceslikelegumes,leafy green vegetables,andsomefruits,so lowerintakescanbeexpectedwherethestapledietconsistsofunfortified wheat,maize,or rice,andwhenthe intakeof legumesandfolate-rich vegetablesandfruitsislow.Theresult ofStelutie*tal.*,(2011)issimilartopresentfindingswherepeoplealsoreportedlowintakeof

folate,vitaminB6andvitaminB12.Thiscouldpossibly beasaresultoflackofaccessto vitamin-rich dietarysources.

Calciumandphosphorusareimportantmineralsessentialforthebody functionsand metabolismwhichwerebothrevealedtobe inadequateamongallthecategoriesofthe respondents.However,thecivilservantcategory showedabettertrendforphosphoruswith abouthalfoftherespondentswhowerecivilservantshaving phosphorusadequacy.This couldbetraceabletothevitalrolethateducationplaysinunderstandingnutritionknowledge. Theproportionoftherespondentswithinadequatelevelsofintakeofcalorieandsodiumwas nottoodifferentfromeachother.Ahigherpercentageoftherespondents hadvery poor intakewhichcouldbeattributedtothefactthatsuchelderlyrespondents maydeliberately avoidfoodsthat are rich in sodiumandhighincalorie.The implicationisthat respondentswereelderly,thereisahightendencythatthey lacksodiumcalorie.Thisisa disease common among elders.

Levelofeducationandtypeofoccupationwere thetwosocio-demographiccharacteristics whichhadasignificantassociationwiththe levelofadequacy ofPotassium.Thisimpliesthat peoplewitha lowlevelofeducationmightbepronetopotassiumdeficiency thanpeoplewho arewelleducated.Also,respondentswhoseoccupationsareinlinewithhealtheducationmay facelessriskoflackofpotassiumwhereasrespondentswhoseoccupationhasnothing todo with health maybeproneto therisk attached to potassiumdeficiency.

Table4.24showstheassociationbetweensocio-demographicvariablesandthe levelofadequacy ofironofboththeruralandurban respondents.About11.10%and 88.9%ofthe respondents hadadequate aswellas excess Ironlevelrespectively. Noneofthesocio-economicvariables wassignificantly associatedwiththelevelofadequacy ofiron.However,therespondents' housing type was significantly associated with the adequacy of iron. Amongtheiron inadequacy group,thosewitharoomhadmoreproportionthanthoseliving ina flatwith bedrooms and other types of accommodation.

5.1.7 Dietaryfibre

Itwasshowninthestudy thatofalltheSocio-demographicvariablesassessed,itwasonly ageoftherespondents thatshowedastatistically significant($p<0.05$)positiveassociation withtherespondents'dietary fibre.Alargerpercentageoftherespondentshadinadequate dietary Fiberintakewhichwasalmostthesameforbothmonogamousandpolygamous maritalgroups,respectively.Itcouldbeinferred fromthefindingsthatthe higherthe agethe highertheadequacy ofdietary fiberwhilethelowertheagethelessadequateisthedietary fiber.Notwithstanding,noneofthesocio-economicvariablesshowedany statistically significant relationship with the adequacyof dietaryfibre.

VitaminAisanindispensablenutrientwithenormousimportanceinthebody rangingfrom itsanti-oxidativeroletoitsroleinvisionandnourishing theskin.Inthisstudy,thedietof boththe urbanandruraldwellers alike wasinadequate inrelationtoVitaminA content. NosignificantrelationshipwasseenbetweenVitaminAadequacy andtherespondents' socio-demographicandsocio-economicstatus.Thismay beduetotheinability ofthe respondentstoafford some vitaminsrichfood itemsor maybe asa resultof their poor educationallevelwhichmighthavepreventedthemfromunderstanding theroleofeating varietiesoffruitsandvegetablesinmeeting vitaminArequirement.Nidhi*etal*.,(2008)had similarfindingswhereitwasreportedthatSixty percentoftheirrespondentshadvitaminA deficiencyas assessed byxeropthalmia, rough andscalyskin.

Thelevelofadequacy ofVitaminCanditsassociationwithsocio-demographicvariables revealsthattheproportionoftherespondentshaving aninadequatelevelofVitaminCwas higheramongDivorced/separatedandwidowedrespondents,thanmarriedrespondents.La ck ofvitaminCreportedforrespondentsinthesecategoriesisapointertotherespondents'poor nutritioneducationonfood preparationandhowwater-soluble vitaminslike VitaminCand theB-Vitaminscanbeconserved.AsimilarresultwasreportedbyNidhi*etal.,*(2008)where itwasdiscoveredthatforty-fivepercentoftheslumwomenhadadeficiency ofvitaminC, which was observed bysponginess and swellingof gums.

Therewas astrong negativecorrelation ($p<0.001$) between ageandbodymassindex indicatingthattheolderonebecomesthelowerthebody massindex(BMI).Older participantsalsotend tohave lowscoresonMealskippingandCulture/Lifestylescalesof Eatingbehavioursquestionnaires.Therewasalsoastrongnegativecorrelationbetween BMI and Snacking/convenience ($p<0.001$).Thisindicatesthatthosewhoeatsnacksand conveniencefoods moretend to havelowerBMI. Thisfinding mightbebecauseolderrespondentsdonoteatjunks thatcan increasethelevel offatintheirbody whileyoungerrespondentstendtoeatmorejunkswhichexplainedthe reasonwhycorrelationexistedforageandBMI.Also,youngerrespondentstendtoskipmore mealsthanolder respondents. Thereasonfor thisisbecauseyounger respondentswhowere stillinactiveserviceorwhowereengagedinoneformofworkortheothermayskipbreakfast and takelunchand dinner.

There wasanegativecorrelationbetweenage,andintakesofallfoodnutrients(thoughnot statistically significant)exceptforVitaminCintakewhichshowedapositivecorrelation. VitaminCintakehad anon-significantpositivecorrelationwith Age($r=0.01$)indicatingthat older participantstakemore VitaminC.Thecorrelationbetweennutrientsintake andBMI wasmostly positive,thisshowsthatthemorenutrient-richfoodonetakes,thehigherthe BMI. Themeasureoftherelationshipbetweennutrientsadequacy andageshowsthecorrelation betweenBMIandNutrientsadequacy. Agecorrelatedpositively withsomeofthenutrients adequacies.Althoughthesecorrelationswerenotstatistically significant,itindicatedthatas onegrowsolder,NutrientslikeCalorie,Protein,Fat,andVitaminC,becomesmoreadequate. Thismay besobecauseoneisgettingoutofhisorherproductiveagewhenmoreenergyis needed to do work.

Mostofthenutrientsweresignificantly andpositivelycorrelatedwithCalorieintake.The correlationcoefficientsbetweennutrientsadequacy aspresentedinTable 4.34alsoshowed thatallthenutrientshadapositivecorrelationwitheachother,andmostofthesecorrelations weresignificant.However, thecorrelationbetweenIronandVitaminB6adequacies,Zinc andFolateadequacies,&zincandPotassiumadequacieswere positivebutnotsignificant. Thistrendof positivecorrelationsimpliesanindividualthathasa particularnutrient

inadequateamountwillhavetheothernutrientinadequateamount.ForInstance,respondents thathadCalciuminadequate amountalsohadadequate Phosphorus, Sodium, Potassium,
Zinc,Ironandmagnesium.Similarly,respondentswithanadequatelevelofPotassiumalso had ZincIronand Magnesiumin adequate amounts.

AlltheeatingstyleshadasignificantcorrelationwitheachotherasshowninTable4.36.The correlationswerepositiveandin most caseshigh. Exceptforthe correlation betweenlow-fat eating styleandothereating styles,thecorrelationcoefficientswerewellabove0.4. Respondentswhoatelowfatalsotendtosnackmore,atemoreemotionally,planningahead eating,skipping a meal and cultural/lifestyleeating. Thosethat skip mealsalso tend to eat in a cultural/lifestylemanner.

5.1.8 Nutrients adequacy and health-relatedquality oflifeofadults

Age correlatedsignificantly,thoughnegatively,withPhysicalfunction (PF), Role-physical (RP),Bodily pain(BP),General(GH),Vitality(VT),roleemotional(RE)andothers.Thus, olderrespondentshaveapoorerqualityoflifeintheirrespectivesubscales.Theroleofphysical Subscalehadasignificantpositivecorrelationwiththeothersubscalesof HRQL($p<0.01$). Similarly,Bodily pain(BP),General(GH),andVitality (VT)SubscalesoftheHRQL had significant positive correlations with othersubscales($p<0.01$). The correlation between BMI andHRQL(anditssubscales)arenotsignificant.However,havingagoodqualityoflife (as
measuredbytheReportedHealthTransition(RH)subscale)alsomeanthavingagoodquality oflifeonthePhysicalhealth(PHH)subscale,MentalHealth(MEH)subscale,andtheoverall health-related QualityofLife(HQRL) scale.

TheGeneralHealth Subscalecorrelated significantlywithLow-fateating,Emotional eating, planning aheadandcultural/lifestyleBehaviour.Thesepositivecorrelationsindicatethat thosethatpracticeanyofemotionaleating style, planningaheadstyle,andcultural/lifestyle behavioureating stylewilldowellonthegeneralhealthsubscale.ThisissimilartotheRH (reported Healthtransitionsubscale) thathadapositive(andsignificant)

correlationwithall the subscales of HRQL.Role Emotional(RE) subscale hada negative correlationwithmeal skippingeatingstyle.

The associationbetweentheTypeofhousethe respondentslivedandtheirhealth-related quality oflifewassignificant($p<0.05$).However,respondentswholivedinothercategories ofhouses(e.g.facemeIfaceyou)haveahigherproportionofthemwithgoodqualityoflife thanFlatwithbedrooms, Self-contained,oraroom.Inasimilar manner, the Mainsourceof cookingfuelcategory ($p<0.05$),Incomecategory ($p<0.001$),Totalhouseholdcategory ($p<0.001$)weresignificantlyrelated with health-related qualityof life. Respondents who use alternativesourcesofelectricity (e.g.solar,generator) reportedahigherproportionhavinga goodhealth-relatedquality oflifethanthoseusinga publicpowersupply,Candle/lanternor No sourceof electricity. Theassociationbetweenhealth-relatedquality oflifeandsocio-demographicvariablesis showedthanMalerespondentsreportedgoodhealth-relatedquality oflifethanfemale respondents.

Interestingly,respondentswithatertiarylevelofeducationreportedpoorhealth-relatedqualityoflife muchmorethanrespondentswithsecondary, primary ornoeducation.
Thisissimilartoamaritalstatuswheretheproportionofdivorced/separatedrespondentsthat hadthegoodhealth-relatedqualityoflifeweremorethanthatofwidowedormarried respondents.Thisassociationbetweenmaritalstatusandhealth-relatedqualityoflifeis significant ($p<0.05$),as that of Age($p<0.05$), Education ($p<0.05$) and Religion ($p<0.05$). Table4.39showstheresultofthebinarylogisticregressionofhealth-relatedqualityoflife onselectedsocio-demographicandsocioeconomicvariables.

Theselected variables were the onesthatweresignificantlyassociatedwithhealth-relatedqualityoflifeinTables4.75and
4.76above.Althoughnotsignificant,thosewithtertiaryeducationwereabouttwice(2times) morelikelytohaveapoorqualityoflifethanthosewithnoeducation(OR=1.739,p=0.199). However,agehadasignificantassociationwithhealth-relatedqualityoflife(OR=0.962, $P<0.01$), showingthatasone advancein age, suchis likelyto haveapoor qualityof life. Houseownership($p<0.001$), Main sourceof lightingcategory($p<0.05$)and Quintile

(wealth
Index)($p<0.05$)hadasignificantassociationwitheatingbehaviourasshownintable4.78. Respondents who earnedmorethan ₦50,000 had the highest proportion ofpeople with good
eatingbehaviour.Waterclosetusershadahigherproportionofrespondentshavinggood eatingbehaviourthanthosewithnotoiletfacilitye.g.openbush,surfacewater,andPitlatrine. However,thosewithnosourceofelectricityhaveahigherproportionhavinggoodeating behaviorthanthosethat useCandle/lantern, Publicpowersupply,or alternativesources (e.g.
solar,generator).Averagefamiliesreportedhigherproportionshavingbadeatingbehaviour thanpoororrichfamilies.Thetablealsoshowsthattheproportionwithno housesandgood eatingbehaviour was more than thosewith housesand goodeatingbehaviour.

Ahighproportionoftherespondentsreportedahighperceivedhealth-relatedqualityoflife, justasmosthadanormalBodyMassIndex.However,asizeableproportionwaseitherobese, underweightoroverweightrespectively.TherelationshipbetweenHRQoL andBMI was significant($P<0.05$).Allthrough,the proportionwithhighHRQoL washigherthanthose withlowHRQoL.However,amongthosewithlowHRQoL,thehighestproportionwasthose whowereoverweight,whilethatofthosewithhighHRQoL washighestamong thosewith normalBMI.Therelationshipbetweentherespondents'Locality andtheirBMIwasalso statisticallysignificant($p<0.001$)one.Mostoftheunderweightrespondentswereintherural area.In contrast, thosewho wereobeseweremajorlyresident in urbanareas.

5.2 CONCLUSION

Respondentsofthisstudy revealedthattherewerechangesintheirdietary habitsandfood culturethroughthe
gradualerosionoftraditionalindigenousfoodsystem.Urbanisationandfood transitionwasreportedtodivertconsumers’attentionfromlocally availablefoodsto modernizedprocessedfoods.Erosionof food culture wasattributedtotheuse of fertilisers andherbicideswhichwereperceivedtoberesponsiblefor the reductioninorganoleptic propertiesandnutritionalquality ofthepresentday foods.Useofherbicideswasalso

attributedtoareductionintheavailability ofwildly-grownvegetables,therebyreducing dietarydiversification.

Majorityofrespondentswereself-employedandbelongedtoalowsocio-economicclasswith lowincome,resultinginpooraccesstonutritiousfoods,andhencethepoornutritionalstatus ofmany oftherespondents.Educationandoccupationweresignificantlyassociatedwith eatingbehavior,themore educatedbeingwasmoreinvolvedinfrequentsnackingandeating awayfromhome.Therewasan inadequateintakeofmicronutrientsamongbothurbanandrural dwellers.The ruraldwellersshowedmuchbetterfoodchoicesandhabitsthantheurban dwellers,assnackingandmealskippingwashigheramongtheurbandwellersthantheirrural counterparts.

Majority ofrespondentsreportedahighperceivedhealth-relatedquality oflife,andmore thanhalfhadnormalBodyMassIndex.Mostoftherespondentswithalowperceivedhealth-relatedqualityoflifewereoverweight.Mostoftheunderweightrespondentswereintherural areawhilethosewhowereobeseweremajorlyresidentintheurbanareas.Olderrespondents (≥50years)reportedlyhadapoorerhealth-relatedquality oflifeintermsofbody pain, generalhealth,andvitality.Malerespondentsreportedgoodhealth-relatedqualityoflifethan femalerespondents,whilerespondentswithatertiarylevelofeducationreportedpoorhealth - relatedqualityof lifethan respondentswithsecondary, primaryor noeducation. The proportionofdivorced/separatedrespondentsthathadagoodhealth-relatedquality oflife wasmore thanthatofwidowedormarriedrespondents.Respondentswithnoeducationhad pooreatingbehavior,andlowfruitconsumptionandperceivedthehealth-relatedquality of lifewereboth common in rural and urban areas.

5.3 RECOMMENDATION

There hasbeenachange fromindigenousfoodculture to westernisedfoodhabitswith frequentsnackingandconsumptionof ready-to-eatfoods basedonconvenienceandlackof mealplanningamongtherespondents,especially thoselivinginurbanareas.Also, the

consumptionoffreshfruitsandvegetableswasvery lowamongurbanresidentsdueto the cost of purchase.

Itisthereforerecommendedthatcookinganddaily mealplanningshouldbeencouraged amongboth urban and rural dwellers to reduceoreliminate unhealthysnacking.

Consumptionofhealthy snackssuchasfreshfruitsandvegetablesaswellaslocal traditionalsnacksshouldbepromotedinthestudy areatopreventconsumptionofhigh energy, low nutrient-denseunhealthysnacks.

Use ofindigenouscondiments,additives,andspicescoupledwiththededicationoftime toandencouragingcookingathomeby caregiverswillpromotehealthy eatingatthe household level and improve the level of health-related qualityof lifein thestudyarea.

Promotionofourtraditionalindigenousfoodsandhealthylifestylesamongtherespondents willimprovetheirhealth-related qualityof life.

Furtherstudiesonreductioninorganolepticpropertiesandpalatabilityoffooditemsfrom the studied localitywillbeneeded to affirm or dispute the claim of respondents.

5.4 CONTRIBUTION TO KNOWLEDGE

Thestudyreveals and establishes that:

There isagradualerosionofourtraditionalindigenousfoodsystemandchangesindietary habitsandfoodcultureof bothruralandurbandwellers throughurbanisationandfood transition. Thepeople inthe urban areasnack morethan therural dwellers

Fertilizer, herbicidesandotherchemicalsuse incrop productionarethreatstowildly-grown vegetables, dietarydiversification and health-related qualityof life.

Theeatingbehaviorofthepeopleisinfluencedby theiroccupation,location,andlevelof education.Theruraldwellershadmuchbetterfoodchoicesandhabitsthantheurbandwellers The shiftfromtraditionalindigenousfoodstowesterndiethasreducedthehealth-related qualityof lifeof both therural and urban dwellers.

Pooreating habitandculturepre-disposesbothurbanandruraldwellerstomicronutrients deficiencies.

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UNIVERSITY OF IBADAN, IBADAN, NIGERIA

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QuestionnaireID	
State	
SenatorialDistrict	
LGA	
Ward	
HouseholdNo	
PhoneNo.	

APPENDICES

EFFECT OFCHANGESINFOOD CULTURE AND HABITS ON THE NUTRITIONAL STATUS

ANDHEALTHRELATEDQUALITYOFLIFEOFADULTS INOYOSTATE

InformedConsentForm

Greetings,

My NameisAKINRINADEGraceapostgraduatestudentoftheDepartmentofHuman Nutrition, Facultyof Public Health, Collegeof Medicine, UniversityofIbadan, Nigeria.Iam presently carryingoutastudy onthe**"EFFECTOFCHANGESIN FOODCULTUREAND HABITSONTHENUTRITIONALSTATUSANDHEALTHRELATEDQUALITYO FLIFE OFADULTS IN OYOSTATE"**

Confidentiality andConsent:

Iwillaskyousomequestions,someofwhichmaybepersonal.Yourparticipationinthis study isentirelyvoluntary.Theinformationprovidedwillbekeptconfidentialandwillnot bedisclosedtoathirdparty.Nonameisrequiredinfilling thequestionnaire.This questionnairewillrequireabout20minutesofyourtime.Pleasetryandgivehonestresp onses tothequestionsasmuchaspossible.Youarefreetoaskquestionswhereitisnotclear.Tha nk you

Do I haveyouragreement to proceed? Yes [ ] No [ ]

Respondent's Signature_____Date _____

Signatureof respondent indicates informedconsent was provided.

AKINRINADE Grace

Questionnaire

Demographic Characteristics

S/N	DemographicCharacteristics					
1.	**Ageatlastbirthday(inyears)**					
	Sex	Male(1)	Female(2)			
2.	**Ethnicity**	Yoruba(1)	Igbo(2)	Hausa(3)	Others(4)Specify……..	
3.	**MaritalStatus**	Single(1)	Married(2)	Divorced/Separated(3)	Widow(4)	
4.	**Type of Marriage**	Monogamy(1)	Polygamy(2)			
5.	**Noofwives**					
6.	**Highest Education**	None(1)	Primary(2)	Secondary(3)	Tertiary(4)	
7.	**Occupation**	Trader(1)	Artisan(2)	CivilServant(3)	Others(4)Pleasespecify	
8.	**Religion**	Christianity(1)	Islam(2)	Traditional(3)	Others(4)Pleasespecify	
9.	**Employment status**	Not applicable (suspension litigationetc)(1)	Unemployed (2)	Self employed (3)	Wage–Earner (4)	Retired (5)
		PrivateCompany(7)	Other(8) Pleasespecify			
10.	**Incomelevelinamonth**	Lessthan₦10,000(1)	₦20,000–₦29,000(3)	₦40,000–₦49,000(5)		
		₦10,000–₦19,000(2)	₦30,000–₦39,000(4)	₦50,000&above(6)		
11.	**Amountspentonfoodina month**	Lessthan₦10,000(1)	₦20,000–₦29,000(3)	₦40,000–₦49,000(5)		
		₦10,000–₦19,000(2)	₦30,000–₦39,000(4)	₦50,000&above(6)		
HouseholdCharacteristics						
12.	**TotalnumberofpeopleintheHousehold:**					
	Numberofpersonsperroom:					
13.	**Houseownership**	No(0)	Yes(1)			
14.	**Type of house**	Aroom(1)	A RoomandParlor(2)	Selfcontained(3)		
		2-3bedroomApartment(4)	Bungalow(5)	ADuplex(6)		
15.	**Building material**	Wood(1)	Mud(2)	ConcreteBrick(3)	Other(4)	
16.	**Flooringmaterial**	None(1)	Wood(2)	Concrete(3)		
		Tiles(4)	Terrazzo(5)	Other(8)Pleasespecify_____		
17.	**Roofingmaterial**	Thatched roof (1)	Aluminium sheet(2)	Corrugated sheets(3)	Concrete(4)	Others(5)
18.	**Main source of drinkingwater**	Surfacewater (stream,river,pond) (1)	SurfaceWell (2)	DeepWell(3)		
		Publicwatertap (4)	Municipalwatersupply (5)	Watersupply(tankersand vendors)(6)		
		Boreholeinresidence(7)	Packagedwater(sachetandbottledwater)(8)			
		Other(9)Pleasespecify_____				
19.	**Main source of Cookingfuel**	Wood(1)	Charcoal(2)	Kerosene(3)		
		Gas(4)	Electricity(5)			
		Other(6)Pleasespecify_____				

Thankyouforcompletingquestions!

20.	**Main source of Lighting**	None(1)	Candle(2)	Lantern(3)
		Publicpowersupply(4) (PHCN)	Alternativesources(5)	
		Other(6)Pleasespecify_____		
21.	**Toiletfacility**	Openbush(1)	Surface water (stream, river, pond etc)(2)	Pitlatrine(3)
		Watercloset(4)	Other(5)Pleasespecify_____	
22.	**Refuse disposal Method**	Openbush(1)	Surfacewater(streams,riversetc)(2)	Burning(3)
		Refusedump(4)	Incinerator(5)	Cityservice(6)
		Other(7)Pleasespecify_____		

Household properties(Wealthindex)

Gadgets			**Furniture**			**Properties**		
Radio	No(0)	Yes(1)	Table	No(0)	Yes(1)	Land	No(0)	Yes(1)
Television	No(0)	Yes(1)	Chair	No(0)	Yes(1)	Clock	No(0)	Yes(1)
Camera/Camcorder	No(0)	Yes(1)	Sofa	No(0)	Yes(1)	Waterpump	No(0)	Yes(1)
Cassetteplayer	No(0)	Yes(1)	Bed	No(0)	Yes(1)	Grinder/Blender	No(0)	Yes(1)
DVD/VCDPlayer	No(0)	Yes(1)	Armoire	No(0)	Yes(1)	Waterheater	No(0)	Yes(1)
Mobilephone	No(0)	Yes(1)	Cabinet	No(0)	Yes(1)	Washingmachine	No(0)	Yes(1)
Computer	No(0)	Yes(1)	**Window**			Micro-wave	No(0)	Yes(1)
Digitaldecoder (DSTV,Startimesetc)	No(0)	Yes(1)	WithShutters	No(0)	Yes(1)	Air-conditioner	No(0)	Yes(1)
Watch	No(0)	Yes(1)	Withglass	No(0)	Yes(1)	Refrigerator	No(0)	Yes(1)
Vehicle			Withscreen	No(0)	Yes(1)	Generator	No(0)	Yes(1)
Bicycle	No(0)	Yes(1)	Withcurtains	No(0)	Yes(1)	Animals	No(0)	Yes(1)
Motorcycle	No(0)	Yes(1)				Bankaccount	No(0)	Yes(1)
Tricycle	No(0)	Yes(1)				Domesticservant	No(0)	Yes(1)
Car	No(0)	Yes(1)						
Truck	No(0)	Yes(1)						

Thankyouforcompletingquestions!

	Foodfrequency Questionnaire											
No.	**FoodDescription**	**No**	**Rarely**	**Daily**			**Weekly**			**Monthly**		
				Once	**2ce**	**3ce**	**Once**	**2ce**	**3ce**	**Once**	**2ce**	**3ce**
1.	**CASSAVA :** 1. Gari											
	2. Lafun											
	3. Fufu											
	4. Others (Pleasespecify)											
2.	**YAMAND POTATOES** 1. Yam(roasted/boiled)											
	2. Yam flour											
	3. Poundedyam											
	4. Yamporridge											
	5. Yam(fried)											
	6. Cocoyam(cooked)											
	7. Cocoyam(fried)											
	8. Sweet potatoes (cooked)											
	9. Sweet potatoes (fried)											
	10. Others (pleasespecify)											
3.	**MAIZE:** 11. Ogi/Pap/Koko											
	12. Eko/Agidi											
	13. Tuwo Masara											
	14. Maize grain(cooked/roasted)											
	15. Kokoro											
	16. Sapala/Abari											
	17. Iro											
	18. Guguru											
	19. Others (Pleasespecify)											
4.	**RICE:** 20. White Rice(cooked)											
	21. Jollofrice											
	22. Friedrice											
	23. Tuwoshinkafa											
	24. Others (Pleasespecify)											
5.	**BEANS/COWPEAS** 25. Beans (cooked/boiled)											
	26. Moin –moin											
	27. Akara											
	28. Akara Ikoko											
	29. Ekuru											
	30. Gbegiri											
	31. Others (Pleasespecify)											
6.	**WHEAT:** 32. Whole wheat bread											
	33. White bread											
	34. Biscuit											
	35. Wheatflour(boiled)											
	36. Confectionaries e.g. chinchin, puff-											
	37. Others (Pleasespecify)											
7.	**MEAT AND ALLIED PRODUCTS:** 38. Beef											
	39. Poultry											
	40. Fish											
	41. Egg											
	42. Freshmilk											
	43. Tinnedmilk											
	44. Cheese											
	45. Yoghurts											
	46. Others (Pleasespecify)											

8.	**TEA,BEVERAGESAND OTHER DRINKS** 47. Tea (Lipton,toptea etc)											
	48. Beverages (Milo, Bourn vita, Richoco)											
	49. Coffee											
	50. Others (Pleasespecify)											
9.	**FRUITS** 51. Citrus fruits (oranges,grape,lemon,tangerines,lime)											
	52. Mango											
	53. Pawpaw											
	54. Guava											
	55. Pineapple											
	56. Watermelon											
	57. Cashew											
	58. Apple											
	59. Pear											
	60. Carrot											
	61. Banana											
	62. Plantain											
	63. Others (Pleasespecify)											
10.	**OIL AND SEED NUTS** 64. Peanut/Groundnut(boiled/roasted)											
	65. Cashewnut											
	66. Oil palmnut											
	67. Coconut											
	68. Others (Pleasespecify)											
11.	**VEGETABLES** 69. Leafy vegetables											
	70. Nonleafyvegetable (e.g.Okro)											
	71. Others (Pleasespecify)											
12.	Drinks 72. Carbonateddrinks (Coke, Fanta etc)											
	73. Malted drinks (maltina,guiness etc)											
	74. Alcoholic drinks (Gulder, Star etc)											
	75. Juice(Funman, Five Alive etc)											

24hr DietaryRecall.

Pleasetellmeeverythingyouateordrankafteryouwokeupyesterdaymorning.Includeallyouat
e
and drankathome and away, even snacks, tea,coffee.Be specificaspossible.

Item No.	Food/Drink	Description (type, volume,	Place Taken	Time	Quantity	Weight equiv. (g)

FOODINTAKE. Wasfoodintake usual? YE NO IfNO, How was itunusual?	FOOD HABITS? ProbeforSupplement(Iron,Vitamins,antimalariald rugs, othersupplement)YES NO IfYESSpecify……
Wasita Feastday? YE NO	Do you take Fermented beverages?(e.g. Alcohol) IfYESSpecify……
ProbeforSickness YES NO IfYESdid the sicknessaffectyourappetite YES IfYES, how?IncreaseORDecrease	Do you Smoke?YES NO

Anthropometric Measurements

Age(inyears)		**Weight(kg)**		**%Bodyfat**	
Sex		**Height(cm)**		**%Visceralfat**	

Thankyouforcompletingquestions!

Ea*pt*tingbehaviourpatternQuestionnaire

(*adaedfromSchulundtDG,PhD.VanderbiltUniversitySchoolofMedicineODAQuestionnaire***)**

Readeachitemandthink ifyouagreeordisagreethat the itemdescribesyouand youreating habits. Marktheboxthatbestdescribes yourlevelofagreement with each statement.Ifa statementdoesnot apply toyou(forexample aquestionasksaboutwhatyoudoatwork youdonothavea job),then mark3 (neutralorN/A)box.

1 – Strongly disagree; 2 –Disagree;3 – Neutralor N/A; 4 – Agree; 5–Stronglyagree

		SA	D	N	A	SD
1	I stop forfastfoodbreakfaston my waytowork	1	2	3	4	5
2	Myemotionsaffectwhatandhowmuchl eat	1	2	3	4	5
3	I uselowfatfoodproduct	1	2	3	4	5
4	I carefullywatchtheportionsizesof my food	1	2	3	4	5
5	I buysnacksfromvendingmachine	1	2	3	4	5
6	I choosehealthyfoodstopreventheartdisease	1	2	3	4	5
7	I eatmeatlessmealsfromtimetotimebecauseIthinkthatishealthierforme	1	2	3	4	5
8	I taketimetoplan mealsforcomingweek	1	2	3	4	5
9	WhenI buysnackfoods,I eatuntilI havefinishedthewholepackage	1	2	3	4	5
10	I eatforcomfort	1	2	3	4	5
11	I ama snacker	1	2	3	4	5
12	I countfatgrams	1	2	3	4	5
13	I eatcookies,candybars,oricecreaminplaceofdinner	1	2	3	4	5
14	WhenI don’tplanmeals,I eatfastfood	1	2	3	4	5
15	I eat whenI amupset	1	2	3	4	5
16	I buy meateverytimeI gotothe grocerystore	1	2	3	4	5
17	I snackmoreat night	1	2	3	4	5
18	I rarelyeatbreakfast	1	2	3	4	5
19	I trytolimitintakeofredmeat(beef)	1	2	3	4	5
20	WhenI amina badmood,I eatwhateverI feellikeeating	1	2	3	4	5
21	Ineverknow whatIamgoingto eatforsupperwhen Igetup inthe morning	1	2	3	4	5
22	Isnacktwo to threetimesaday	1	2	3	4	5
23	Fish and poultryaretheonly meats Ieat	1	2	3	4	5
24	When Iamupset, Itend tostopeating	1	2	3	4	5
25	Ilike to eatvegetablesseasoned with fattymeat	1	2	3	4	5
26	IfIeata larger than usual lunch, Iwillskipsupper	1	2	3	4	5
27	Itake ashoppinglisttothe grocerystore	1	2	3	4	5
28	IfIambored, I willsnackmore	1	2	3	4	5
29	Ieatatchurchsocials.	1	2	3	4	5
30	Iamveryconsciousofhowmuch fatis in the foodIeat	1	2	3	4	5
31	Iusually keep cookiesin the house	1	2	3	4	5
32	Ihave aservingofmeatatevery meal	1	2	3	4	5
33	Iassociate success with food	1	2	3	4	5
34	Acomplete mealincludesameat, a starch, a vegetable,and bread	1	2	3	4	5
35	On Sunday, Ieata large mealwith myfamily	1	2	3	4	5
36	Instead ofplanningmeals, I willreplacesupperwith asnack	1	2	3	4	5
37	IfIeata larger than usual lunch, Iwillreplacesupper with asnack	1	2	3	4	5
38	IfIambusy,Iwilleatasnackinstead oflunch	1	2	3	4	5
39	SometimesIeatdessertmore than onceaday	1	2	3	4	5
40	Ireduce fat inrecipesbysubstitutingingredientsand cuttingportions	1	2	3	4	5
41	Ihave asweettooth	1	2	3	4	5
42	Isometimessnackeven when Iamnothungry	1	2	3	4	5
43	Ieatoutbecause itis more convenientthan eatingathome	1	2	3	4	5
44	Ihate to cook	1	2	3	4	5
45	Iwould ratherbuytakeoutfood and bringithome thancook	1	2	3	4	5
46	Ihave at least threetofourservings ofvegetablesperday	1	2	3	4	5
47	To me, cookiesare anidealsnackfood	1	2	3	4	5
48	Myeatinghabits are very routine	1	2	3	4	5
49	IfIdo not feelhungry, Iwillskipa mealeven ifitis time to eat	1	2	3	4	5

50	Whenchoosingfastfood, Ipicka placethatoffers healthyfoods	1	2	3	4	5
51	Ieatatafast food restaurantatleast threetimesa week	1	2	3	4	5

Thankyouforcompletingquestions!

HealthrelatedQuality oflife

Yourhealthandwellbeing

Thissurveyasksforyourviewsaboutyourhealth. Thisinformation willhelpkeeptrackofhowyoufeeland howwell youareabletodoyourusualactivities.Thank youforcompletingthissurvey! Foreachofthefollowingquestionspleasemarktheonethat bestdescribesyouranswer.

		Excellent (1)	Verygood (2)	Good (3)	Fair (4)	Poor (5)
1.	**Ingeneral,wouldsayyourhealthis**					

		Muchbetternowthan oneyear ago(1)	Somewhatbetternowthan oneyear ago(2)	Aboutthesameasoneyearago(3)	Somewhatworsenowthan oneyear ago(4)	Much worse now than one year ago (5)
2.	**Comparedtooneyearago,howwouldyourateyourhealthin generalnow?**					

3.	**Thefollowingquestionsareaboutactivitiesyoumightdoduringa typicalday.Doesyourhealthnowlimityouintheseactivities?Ifso,how much?**	**Yes,limited a lot (1)**	**Yes, limited a little (2)**	**No, not limited atall(3)**
a.	Vigorousactivitiessuchasrunning,lifting,heavyobjects,participatingin strenuoussport			
b.	Moderateactivities,suchasmovingtables.Pushingavacuumcleaner, bowling,or playinggolf			
c.	Liftingorcarryinggroceries			
d.	Climbingseveralflightsofstairs			
e.	Climbingone flightofstairs			
f.	Bending,kneelingor stooping			
g.	Walkingmorethanamile			
h.	Walkingseveralhundredyards			
i.	Bathingordressingyourself			

4.	**Duringthepast4weeks,howmuchofthetimehaveyouhad anyofthefollowingproblemswithyourworkorotherregulardailyactivitiesasa resultofyourhysicalhealth?**	**Allofthe time (1)**	**Mostofthe time (2)**	**Some of thetime (3)**	**Alittleof thetime(4)**	**None of thetime**
a.	Cutdownontheamountoftimeyouspent					
b.	Accomplishedlessthanyouwouldlike					
c.	Werelimitedinthe kindofworkorotheractivities					
d.	Haddifficultyperformingtheworkorotheractivities (forexample,ittookextraeffort)					
5.	**Duringthepast4weeks,howmuchofthetimehaveyouhadanyofthefollowingproblemwithyourworkorotherregular dailyactivitiesasa resultofanyemotionalproblems**					
a.	Cutdownontheamountoftimeyouspentonworkorother Activities					
b.	Accomplishedlessthanyouwouldlike					
c.	Didworkorotheractivitieslesscarefullythanusual					

		Notatall (1)	Slightly (2)	Moderately (3)	Quitea bit (4)	Extremely (5)
6.	**Duringthepast4weeksto whatextenthasyourphysical healthoremotionalproblemsinterferedwithyournormal socialactivitieswithfamily,friends,neighborsorgroups?**					

		None (1)	Very mild (2)	Mild (3)	Moderate (4)	Severe (5)	Verysevere (6)
7.	**Howmuchbodilypainhaveyouhadduringthepast 4 weeks?**						

		Notatall (1)	Alittlebit (2)	Moderately (3)	Quitea bit (4)	Extremely (5)
8.	**Duringthepast4weeks,howmuchdidpaininterfere withyournormalwork(includingboth workoutside thehomeandhousework)?**					

9.	**Thesequestionsareabouthowyoufeelandhowthingshave been withyouduring thepast4weeks. Foreachquestion, pleasegivetheoneanswerthatcomesclosesttothewayyou havebeenfeeling. Howmuch ofthetimespentduring the past4 weeks**	**Allofthe time (1)**	**Most of thetime (2)**	**Some of thetime (3)**	**Alittleof thetime (4)**	**None of thetime (5)**
a.	Didyoufeelfulloflife?					
b.	Haveyoubeenverynervous?					
c.	Haveyoufeltsodownindumpsthatnothingcouldcheeryou up?					
d.	Haveyoufeltcalmandpeaceful?					
e.	Didyouhavea lotofenergy?					
f.	Haveyoufeltdown-heartedanddepressed					
g.	Didyoufeelwornout?					
h.	Haveyoubeenhappy?					
i.	Didyoufeeltired?					
10.	**During thepast4weeks, howmuch ofthetimehasyour physicalhealthoremotionalproblemsinterferedwithyour socialactivities(likevisitingfriends,relatives,etc)**					
11.	**Howtrueorfalseiseachofthefollowingstatementsfor you?**	**Definitel y true (1)**	**Mostly true (2)**	**Don't know (3)**	**Mostly false (4)**	**Definitel y false (5)**
a.	I seemto getsicka littleeasierthanotherpeople					
b.	I amashealthyasanybodyI know					
c.	I expectmyhealthto getworse					
d.	Myhealthisexcellent					

Thankyouforcompletingquestions!

INSTITUTE FOR ADVANCED MEDICAL RESEARCH AND TRAINING (IAMRAT)
College of Medicine, University of Ibadan, Ibadan, Nigeria.

Director: **Prof. Catherine O. Falade,** *MBBS (Ib), M.Sc, FMCP, FWACP*
Tel: 0803 326 4593, 0802 360 9151
e-mail: cfalade@comui.edu.ng lillyfunke@yahoo.com

UI/UCH EC Registration Number: **NHREC/05/01/2008a**

NOTICE OF FULL APPROVAL AFTER FULL COMMITTEE REVIEW

Re: Changing Food Habits and Perceived Health Related Quality of Life of Adults in Oyo State

UI/UCH Ethics Committee assigned number: UI/EC/14/0137

Name of Principal Investigator: **Grace O. Akinrinade**

Address of Principal Investigator: Department of Human Nutrition
College of Medicine,
University of Ibadan, Ibadan

Date of receipt of valid application: 16/04/2014

Date of meeting when final determination on ethical approval was made: **07/05/2015**

This is to inform you that the research described in the submitted protocol, the consent forms, and other participant information materials have been reviewed and *given full approval by the UI/UCH Ethics Committee.*

This approval dates from **07/05/2015 to 06/05/2016.** If there is delay in starting the research, please inform the UI/UCH Ethics Committee so that the dates of approval can be adjusted accordingly. Note that no participant accrual or activity related to this research may be conducted outside of these dates. *All informed consent forms used in this study must carry the* UI/UCH EC *assigned number and duration of* UI/UCH EC *approval of the study.* It is expected that you submit your annual report as well as an annual request for the project renewal to the UI/UCH EC early in order to obtain renewal of your approval to avoid disruption of your research.

The National Code for Health Research Ethics requires you to comply with all institutional guidelines, rules and regulations and with the tenets of the Code including ensuring that all adverse events are reported promptly to the UI/UCH EC. *No changes are permitted in the research without prior approval by the* UI/UCH EC *except in circumstances outlined in the Code. The* UI/UCH EC *reserves the right to conduct compliance visit to your research site without previous notification.*

UI/UCH EC
7 MAY 2015
APPROVED
COLLEGE OF MEDICINE

Professor Catherine O. Falade
Director, IAMRAT
Chairman, UI/UCH Ethics Committee
E-mail: uiuchirc@yahoo.com

DEPARTMENTOFHUMANNUTRITION
FACULTYOFPUBLICHEALTH
COLLEGE OFMEDICINE
UNIVERSITYOFIBADAN, IBADAN, NIGERIA

Tel: 02-75|7822
Telegrams:Universitylbadan
Telex:Campus31|28 NG
Fax:(CollegeofMedicine)02-2411768
Email:nutrition-dept@mail.ui.edu.ng

27th September,2013

TheHead,
AtibaLocalGovernment
Administration,
OffaMeta,Oyo.
OyoState

Dear Sir,

LEITEROFINTRODUCTION
AKINRINADE,GraceOyeladun: Matric No.72089

This is to introduceAKINRINADE,GraceOyeladun(MatricNo.72089), is a M.Phil/Ph.D student in the Department of Human Nutrition, Faculty of Public Health, College of Medicine,Universityof Ibadan..She is currently undertakingaprojecttitled:"Effect of Changing Food culture and habit on the Nutritional Status and Health Related Quality of Life among Adults in Oyo State"

I will appreciate your support, for her to collect the data for this project.

Thank you.

DEPARTMENT OF HUMAN NUTRITION UNIVERSITY OF IBADAN

27-01-13.

Grace T. Fadupin, *PhD, NRD*
Ag. Head of Department

DEPARTMENTOFHUMANNUTRITION
FACULTYOFPUBLICHEALTH
COLLEGE OFMEDICINE
UNIVERSITYOFIBADAN, IBADAN, NIGERIA

Tel: 02-7517822
Telegrams:Universitylbadan
Telex:Campus3111128 NG
Fax:(CollegeofMedicine)02-2411768
Email:nutrition-dept@mail.ui.edu.ng

27th September,2013

TheHead,
Ibarapa
EastLocalGovernment,
Eruwa,
OyoState.

Dear Sir,

LEITEROFINTRODUCTION
AKINRINADE,GraceOyeladun: Matric No.72089

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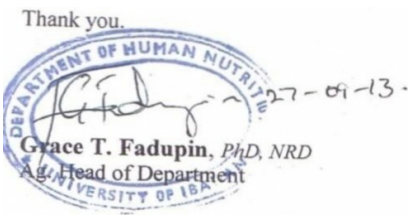

DEPARTMENTOFHUMANNUTRITION
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Fax:(CollegeofMedicine)02-2411768
Email:nutrition-dcpt@mail.ui.edu.ng

27th September,2013

TheHead,
IwajowaLocalGovernme
ntAdministration, Iwara
-Ile,
OyoState

Dear Sir,

LEITEROFINTRODUCTION
AKINRINADE,GraceOyeladun: Matric No.72089

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I will appreciate your support, for her to collect the data for this project.

Thank you.

DEPARTMENT OF HUMAN NUTRITION
27-09-13.
Grace T. Fadupin, *PhD, NRD*
Ag. Head of Department
UNIVERSITY OF IBADAN

/

ATIBALOCALGOVERNMENT

P.M.B. 1043,Ofa-MetaOyo.OyoState.
Tel:0815 887 0358

Alu/017/2
OUrRef

11/3/2014

AkinrinadeGraceOyeladun,
CollegeofMedicine,
UniversityofIbadan,
Ibadan

RE: LETTER OF INTRODUCTION

Sequel to the letter from the Department of Human nutrition, faculty of public health, College of Medicine, University of Ibadan, dated 27th September 2013 on the above subject, I am directed to convey approval for you to proceed on your research work titled "Effect of Changing Food culture and habit on the Nutritional Status and Health Related Quality of Life among Adults in Oyo State" in the Local Government.

Thank you

Aki\y\ E.O. (Mrs.) For: C~clirman,
Atiba Local Gover111111::n
Ofa-Meta, Oyo

IBARAPA EAST LOCAL GOVERNMENT

P. M. B. 1011, Eruwa, Oyo State, Nigeria.

Secretariat Eruwa:

All communications should be addressed to the chairman quoting

Our Ref _____ *Your Ref* _____ *Date* _____

18th March, 2014.

RE:LETTER OF INTRODUCTION
AKINRINADE GRACE OYELADUN: MATRIC N0 72089

In accordance with the letter from Department of Human Nutrition, Faculty of Public Health, College of Medicine, University of Ibadan, Nigeria of 27th September 2013. I am directed to convey approval for you to carry on your research work titled "Effect of changing Food Culture and Habits on the Nutritional Status and Health Related Quality of Life Among Adult in Oyo State" within this Local Government.

We wish you success in your undertakings.

Thank you and God bless you.

Executive Secretary
Ibarapa East Local Govt
Eruwa

Revd. J.A Ogunremi
Secretary
Ibarapa East Local Government
Eruwa.

IWAJOWA LOCAL GOVERNMENT

All Communication should be addressed to the
Chairman Iwajowa Local Government
Iwere-Ile, Oyo State quoting

IWAJOWA LOCAL GOVERNMENT
OFFICE:- LOCAL GOVT. SECRETARIAT,
IWERE-ILE, OYO STATE.

Our Ref: IWLG/715/25 Date: 7th April, 2014.

GRACE T. FADUPIN, PHD, NRD,
AG. HEAD OF DEPARTMENT,
DEPARTMENT OF HUMAN NUTRITION,
FACULTY OF PUBLIC HEALTH,
COLLEGE OF MEDICINE,
UNIVERSITY OF IBADAN.
IBADAN.

RE-LETTER OF INTRODUCTION

I am directed to refer to your letter dated 27th September, 2013 on the above subject introducing AKINRINADE, Grace Oyeladun (Matric No. 72089); an M. Phil/Ph. D Student of the Department of Human Nutrition to the Local Government.

2. I am to inform you that, the Student has been granted an approval by the Management of the Local Government to collect data in the Local Government Area for her project entitled: "Effect of Changing Food Culture on the Nutritional Status and Health Related Quality of Life Among Adults in Oyo State".

3. I am to further add that, the Management of the Local Government wishes her success in her studies.

4. Thank you.

MOJORO J.A.,
SENIOR. ADMIN. OFFICER,
FOR: CHAIRMAN,
IWAJOWA LOCAL GOVERNMENT
IWERE-ILE.

Pls file
Mrs Akinrinade G O PF

Respondents Eating BehaviourPattern

Variables	SD	D	N	A	SA	
n(%) n(%) n(%) n(%) n(%)						
1 I stop forfastfoodbreakfaston my wayto Work		304(51.6)	155(26.3)	46(7.8)	65(11.0)	14(2.4)
2MyemotionsaffectwhatandhowmuchI Eat		78(13.2)	129(21.9)	34(5.8)	282(47.9)	60(10.2)
3 I uselowfat foodproduct		151(25.6)	210(35.7)	44(7.5)	159(27.0)	18(3.1)
4Icarefullywatchtheportionsizesofmy Food		106(18.0)	169(28.7)	48(8.1)	235(39.9)	24(4.1)
5 I buysnacksfromvendingmachine		211(35.8)	140(23.8)	64(10.9)	149(25.3)	21(3.6)
6 I chooseHealthyfoodstoprevent heartdisease		90(15.3)	200(34.0)	85(14.4)	189(32.1)	19(3.2)
7 I eatmeatlessmealsfromtimetotime becauseI thinkthatishealthierforme		130(22.1)	237(40.2)	83(14.1)	118(20.0)	17(2.9)
8 I taketimetoplanmealsforcomingweek		169(28.7)	192(32.6)	57(9.7)	134(22.8)	30(5.1)
9 WhenI buysnackfoods,I eatuntilI have finishedthewholepackage.		135(22.9)	136(23.1)	94(16.0)	178(30.2)	41(7.0)
10I eatforcomfort		36(6.1)	75(12.7)	53(9.0)	305(51.8)	115(19.5)
11I ama snacker		152(25.8)	218(37.0)	43(7.3)	122(20.7)	47(8.0)
12I count fatgrams		203(34.5)	224(38.0)	52(8.8)	94(16.0)	12(2.0)
13I eat cookies,candybars,oricecreamin placeofdinner		299(50.8)	145(24.6)	60(10.2)	49(8.3)	33(5.6)
14WhenI don’tplanmeals,I eatfastfood		185(31.4)	156(26.5)	52(8.8)	151(25.6)	39(6.6)
15I eat whenI amupset		124(21.1)	161(27.3)	94(16.0)	158(26.8)	44(7.5)
16Ibuy meateverytimeIgotothe grocery Store		103(17.5)	219(37.2)	91(15.4)	148(25.1)	20(3.4)
17I snack moreat night		210(35.7)	216(36.7)	40(6.8)	98(16.6)	18(3.1)
18I rarelyeatbreakfast		337(57.2)	174(29.5)	30(5.1)	33(5.6)	8(1.4)
19I trytolimitintakeofred meat(beef)		100(17.0)	236(40.1	57(9.7)	169(28.7)	19(3.2)
20WhenIaminabadmood,Ieat whenever I feellikeeating		84(14.3)	218(37.0)	113(19.2)	153(26.0)	11(1.9)
21I neverknowwhatI amgoingtoeat for supperwhenIwakeupinthemorning.		142(24.1)	194(32.9)	54(9.2)	118(20.0)	71(12.1)
22I snacktwotothreetimesaday		160(27.2)	214(36.3)	62(10.5)	127(21.6)	18(3.1)
23FishandPoultryaretheonlymeatsI eat		137(23.3)	224(38.0)	73(12.4)	132(22.4)	16(2.7)
24WhenI amupset,I tendto stopeating.		141(23.9)	152(25.8)	97(16.5)	149(25.3)	43(7.3)
25Iliketoeatvegetablesseasoned withfatty Meat		108(18.3)	199(33.8)	72(12.2)	169(28.7)	35(5.9)
26IfIeatalargerthanusuallunch,I willskip Lunch		113(19.2)	164(27.8)	56(9.5)	174(29.5)	77(13.1)
27I takea shoppinglisttothegrocerystore		285(48.4)	154(26.1)	90(15.3)	47(8.0)	5(0.8)

SD= StronglyDisagree (1);Disagree=(2);N= NeutralorN/A(3); A= Agree(4); SA= StronglyAgree (5

Table 4.19b: Respondents Eating BehaviourPattern (Continued)

Variables	SD	D	N	A	SA
	n(%)	n(%)	n(%)	n(%)	n(%)
28IfI ambored,I will snack more	175(29.7)	187(31.7)	107(18.2)	102(17.3)	11(1.9)
29Ieatatreligious(church,mosque, etc)socials	19(3.2)	65(11.0)	48(8.1)	273(46.3)	175(29.7)
30Iamveryconsciousofhowmuch fatisinthefoodI eat	136(23.1)	197(33.4)	73(12.4)	151(25.6)	21(3.6)
31 I usually keep cookies in the house	245(41.6)	160(27.2)	65(11.0)	81(13.8)	29(4.9)
32I havea servingof meatatevery Meal	65(11.0)	216(36.7)	59(10.0)	202(34.3)	43(7.3)
33I associatesuccesswithfood	26(4.4)	79(13.4)	116(19.7)	242(41.1)	121(20.5)
34Acompletemealincludesa meat, a starch,a vegetable,andbread	29(4.9)	113(19.2)	157(26.7)	224(38.0)	56(9.5)
35OnSunday,Ieatalargemealwith myfamily	111(18.8)	199(33.8)	103(17.5)	107(18.2)	59(10.0)
36Insteadofplanningmeals,Iwill replacesupperwitha snack	188(31.9)	204(34.6)	81(13.8)	66(11.2)	44(7.5)
37IfI eata largerthanusuallunch, Iwillreplacesupperwitha snack	125(21.2)	124(21.1)	87(14.8)	162(27.5)	81(13.8)
38IfI ambusy,Iwilleata snack insteadoflunch	139(23.6)	181(30.7)	81(13.8)	150(25.5)	30(5.1)
39SometimesIeatdessertmorethan oncea day	196(33.3)	230(39.0)	81(13.8)	72(12.2)	4(0.7)
40I reducefatinrecipesby substituting ingredients and cutting portions.	155(26.3)	202(34.3)	95(16.1)	117(19.9)	15(2.5)
41I havea sweettooth	157(26.7)	137(23.3)	42(7.1)	224(38.0)	21(3.6)
42Isometimessnackevenwhen I am nothungry	152(25.8)	140(23.8)	76(12.9)	185(31.4)	30(5.1)
43I eatoutbecauseitismore convenientthaneatingathome	296(50.3)	159(27.0)	52(8.8)	65(11.0)	10(1.7)
44I hatetocook	318(54.0)	148(25.1)	40(6.8)	63(10.7)	14(2.4)
45I willratherbuytakeoutfood andbringit homethancook	272(46.2)	172(29.2)	54(9.2)	68(11.5)	14(2.4)
46I haveatleastthreetofour servingsof vegetablesperday	43(7.3)	232(39.4)	77(13.1)	208(35.3)	20(3.4)
47Tome,cookiesareanidealsnack Food	113(19.2)	136(23.1)	141(23.9)	174(29.5)	18(3.1)
48Myeatinghabitsare veryroutine	12(2.0)	78(13.2)	62(10.5)	340(57.7)	90(15.3)
49IfIdo notfeelhungry,Iwillskip a mealevenifitistimetoeat	95(16.1)	161(27.3)	64(10.9)	180(30.6)	81(13.8)
50Whenchoosingfastfood,Ipick a placethatofferhealthyfoods	146(24.8)	94(16.0)	127(21.6)	177(30.1)	37(6.3)
51I eatata fastfoodrestaurantat leastthreetimesaweek	262(44.5)	126(21.4)	83(14.1)	65(11.0)	47(8.0)

SD= StronglyDisagree (1);Disagree=(2);N= NeutralorN/A(3); A= Agree(4); SA= StronglyAgree (5)