KNOWLEDGE OF VACCINE PREVENTABLE DISEASES AND CHILDCARE PRACTICES AMONG PRESCHOOL CAREGIVERS IN IBADAN, OYO STATE

BY

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DECLARATION

I hereby declare that this work is original. The work has neither been presented to any other faculty for the purpose of the award of a degree nor has it been submitted elsewhere for publication

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Dr Adaora Elizabeth, OBIAGWU

DEDICATION

To my Father

ABSTRACT

Introduction-Preschool caregivers spend substantial time with children who have inherent susceptibility to preventable diseases particularly vaccine preventable diseases (VPDs). Childcare practices by the caregivers impact on the morbidity and mortality patterns of vaccine preventable diseases (VPDs). Previous studies on knowledge of VPDs, childcare practices and management of childhood diseases focused on mothers (primary caregivers). This study explored the roles of secondary caregivers (preschool caregivers) in disease prevention. It examined their knowledge of VPDs and childcare practices related to disease prevention in preschools.

Methods- A cross-sectional survey with an explorative component was conducted among 799 preschool-caregivers whom were selected using a multi-stage sampling technique. Five Local government areas (LGAs) areas namely Ibadan North, Northwest, Northeast, Southeast, Southwest (Ibadan municipality) were purposively selected from the 33 LGAs in Ibadan. One settlement representing a community was then selected by simple random technique from selected wards of each of the five LGAs. All consenting caregivers in the preschools within the selected communities were interviewed. Data was collected using semi-structured questionnaires. The socio-demographics; knowledge on six VPDs and childcare practices were studied. Practice variables were reported in proportions. Bivariate analysis hi-square test was used to determine associations between variables at a significance level of $p<0.05$. Computing composite knowledge scores involved allotting a point for correct responses and no point for both wrong and 'don't know' responses. Practice score was computed using a 3point likert scale in which –'always' was allotted 2 points; 'sometimes'- 1point; and never had no point. Maximum scores were 94 and 80 points for VPDs and childcare practices respectively. Mean scores derived were used as cut-off points for categorizing main outcome variables into good or poor status.

Results - Respondents' mean age was 33.7 ± 9.5 years. Tertiary education 552(69.1%) accounted for the highest educational level attained by the respondents. Of this, NCE holders were 335 (41.9%). Majority 594(74.3%) of caregivers did not have pre-employment childcare training. Only 71(8.9%) of caregivers affirmed to having in- service training which most of the time internally organized by the school administration twice yearly. Only 99(12.4%) mentioned that pre-employment medical screening was done. Likewise seven hundred and one (87.7%) responses claimed not to have routine medical check-ups in the centers.

Results on immunization practice showed that although, 649 (81.2%) of the respondents reported vaccination as the best preventive approach for VPDs, 139(17.4%) mixed vaccines with local herbs while 11(1.4 %) opted for local herbs alone. Majority 605(75.7%) affirmed that they 'communicate the importance of immunization with parents' always; 586 (73.3%) supported immunization exercises in the preschools'. For 'check children's immunization status' as prerequisite to school entry, proportion was 414 (51.8%). Other practices assessed :- Breast milk were reported to be warmed before feeding the children in only 59 (7.4%) of 201 respondents. A few 133 (16.6%) taste while 44 (5.5%) chew food to soften it before feeding. Force feed rate is (109) 13.6 %. Classrooms are averagely cleaned twice per day. Respondents 551 (69.0%) had good knowledge of VPDs above the mean knowledge score of 42.7 ± 13.6 but poor childcare practice was 453(56.7%). Knowledge of VPDs was significantly associated with good practice ($p < 0.004$).Consistently, educational status, previous affiliation with healthcare facility, training of the respondents and job designation predicted the two outcome variables.

Conclusion- For wholly impactful approach in the prevention of VPDs, this study provides evidence for emphasis on stricter pre -employment certifications/ processes, mandatory regular medical checks, training interventions (outreaches) and monitoring of preschool care-givers' practices. It equally proposes for a review of the educational curriculum at the training institutions for preschool caregivers. Review should focus on case scenarios and practical hands on- appreciation of disease control measures relevant to preschools. Since the schools encourage immunization activities, immunization records check can be made mandatory in preschools.

Keywords: Vaccine preventable diseases, preschools, childcare practices, immunization, primary caregivers and secondary caregivers,

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In the words of Sir Winston (Leonard Spencer) Churchill (1943) '*there is no finer investment for any community than putting milk into babies.*' For all its worth in invaluable terms, I am eternally grateful to my God, my provider, for the fortitude to accomplish this feat; Dr Ajayi, my supervisor for her critical appraisal, professional support and encouragement through the whole process; all my esteemed teachers – Prof. Bamgboye, Dr Adekunle, Dr Fawole, Dr Fatiregun, Dr Dairo, Mr Yusuf, Dr Adedokun, Mr Akinyemi, and Dr Fagbamigbe.

I am grateful to my field research assistants and the preschool caregivers for their enthusiastic participation; to Drs Popoola and Adedokun, Mr Omotosho for showing concerns at my statistical whims and giving in warm inputs.

I am grateful to God for my parents, my twin and other siblings for their dependable love and prayers; for Dr Akpojevkwe; AVM Bello, Dr Akinwonmi, Jide and Laraba, Brian and Dr Teghan and many others. In different ways, you have shown genuine concern for this project work to be completed and thus this accolade goes to you all.

I consider myself privileged and indebted to only one course, a solemn promise to replicate the baby friendly investment act.

CERTIFICATION

I certify that this research was carried out by Adaora Elizabeth OBIAGWU in the department of Epidemiology, Medical Statistics and Environmental Health, Faculty of Public Health, University of Ibadan and was supervised by me

.....7/9/2012.....

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LIST OF ABBREVIATIONS

BCG	Bacille Calmette Guerin
BFHI	Baby-Friendly ™ Hospital Initiative
CCDR-RMTC	Canada Communicable Disease Report- 2006)
CDA	National Child Development Associate
CDC	Communicable Disease Control
CI	Confidence interval;
C-IMCI	Community based intergrated management on childhood illnesses)
DM	Type 2 Diabetes Mellitus
DPT	Diphtheria-Pertusis-tetanus vaccine
DTPa/w	Diphtheria, tetanus and whole-cell or acellular pertussis
EPI	Expanded programme on immunization
FSANZ Fact Sheets	Food Standards Australia and New Zealand
GAVI	The Global Alliance for vaccines and Immunization
Hep B	Hepatitis B
Hib	*Haemophilus influenza type b*
Hib	Haemophilus influenzae type b
HIV	Human immunodeficient virus
IMCI	Intergrated Management on Childhood Illnesses)
LGA	Local Government Area
LGAs	Local Government Areas
MDGs	Millennium Development Goals
MenC	Conjugated meningococcal C
MMR vaccines	Measles, mumps and rubella.
NCE	National College of Education
NDHS	National Demographic health Survey
NHS	National Health Survey
NIDs	National Immunization plus days
NPC	National Population Commission
NPI	National programme on Immunization
OPV	Oral Polio vaccine Trivalent oral polio
OR	Odds-ratio

PHCC	Primary health care clinic
REW	Reaching Every Ward
RI	Routine immunization
SD	Standard deviation
SIDs	Supplementary Immunization days
SPSS version 16	Statistical Package for Social Sciences
SSPE	Sclerosing Pan-Encephalitis
TB	Tuberculosis
UCI	Universal childhood immunization
UNICEF	The United Nations Children's Fund
USA	United States of America
VPDs:	Vaccine preventable diseases
WHO	World Health Organization

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CHAPTER ONE

INTRODUCTION

1.1 Background to the study

In the last two decades, growing numbers of pre-schools have been established worldwide (Breen, 2002). The daycare or pre-schools are considered the most "institutional" of childcare options. A large number of children within the critical age range of 1- 5years attends and spends substantial time at the daycare centers. The hard-line survival dynamics and demands on families make mothers, the primary care- providers, work long hours (Oyemade and Oyewole, 1981). Consequently, to compensate for the care gaps and provide consistency of care in those extended periods of absence, they seek childcare centers with organized activities that would stimulate, explore and develop their children's interest and talent (Drummond (2006). Common practice is for caregivers to discuss issues relating to the children with the supervisor and the child's parents (Us Department of Labour, Bureau of Labour Statistics, 2008). Of utmost importance is the job of keeping the children left in their care healthy. They are a vital mass of health promoters in that they may identify children who may not feel well and in some cases, may help locate facilities that will provide basic health services.

For these roles, pre-school caregivers may constitute the greatest risk to the children especially in cases where there are practice gaps and description of caregivers as inexperienced and untrained as observed by Akinbanmi (1998). In a study on primary tuberculosis infection in daycare center children in Sweden, 32 of 53 attending and 3 of 84 visiting preschool children were infected through contact with *one* of their day care providers (Gillman, 2008; Berggren et al, 2008).

Unfortunately, some of the children may not be immunized against the common childhood illnesses, especially vaccine preventable diseases. According to Eggertson (2008), far too many of the world's children are not being vaccinated against often deadly but preventable childhood diseases. And the care of the children in clusters in daycare settings unlike the individual homes where they come from, creates an increased risk of disease transmission and / or its outbreaks (Oyemade and Oyewole,1981; Kazeem, 2006; Saad, 2009). Peculiar factors within the centers interplay to complete the disease transmission process (Laborde et al, 1994).

In view of the children's susceptibility and dependence on care, early disease detection is key and prevention practices should be optimal. These impact on the children, their parents and the possible disease outcomes, even progression to outbreaks/epidemic proportions. Precautionary measures taken therefore must be evidence based to ensure health and safety of all children as defined by World Health Organization (WHO). It defines health as not just the absence of disease or infirmity but as a state of complete physical, mental and social wellbeing (WHO, 1946).

This study intends to examine the knowledge of pre-school caregivers on vaccine preventable diseases and assess the scope of childcare practices in the centers in disease prevention and supporting mothers regarding their children's health, especially because of their contacts with the children in their formative years.

1.2 Problem Statement

According to Population Reference Bureau (2008), despite the population explosions globally, projections are those of more increase. Nigerian children make up about 40% of its 150million populace. In matching the overwhelming population rates and the increasing care needs of children by their absent mothers, many more daycare centers are being established. In Nigeria, a review of the infrastructural provisions in four western states namely, Oyo, Lagos, Ogun and Ondo states, by Ogunremi (1930) revealed that Oyo state, besides being the largest city with its burgeoning population in West Africa, was equally burdened with the establishment of large numbers of preschools/ schools fewer infrastructure and poor health/ economic indices. The new trend for most proprietors of pre-existing primary and/or secondary schools is to expand on their already stretched capacities to incorporate daycare/preschools centers. The distribution of health and educational facilities in Ibadan is largely focused in central Ibadan. Oyo state Ministry of Health; Education, youth and sports (1995) describes it as urban biased and yet ineffective. The choice of these areas derives from the advantage of their being densely populated, hence increased patronage is envisaged. Some are located in nooks and crannies or difficult landmarks that present challenges for monitoring of the activities in these schools. The number of daycares in some states in Nigeria is so large that the inspecting officers find it difficult to supervise the rapid establishment and running of the schools (Ejieh, 2006).

Akinbanmi (1998) in his study titled 'the sanitary and hygiene related conditions of daycare centres in Ibadan: implication for hygiene education', reported that Ibadan central readily has the largest growing number of daycare centers in Ibadan. About 47.5% of daycare centers were distributed in the transition zone-developing areas. Findings from review of data in 2008, showed that thirty four preschools were established in six months. By the end of 2009, total number of preschools was 193(Women Affairs, SMOH, 2009) *See fig 1.2 below.* However, barely eight months after, this figure rose to 300 (Oyo State Ministry of Health, Women affairs Commission, Child welfare unit, 2010).

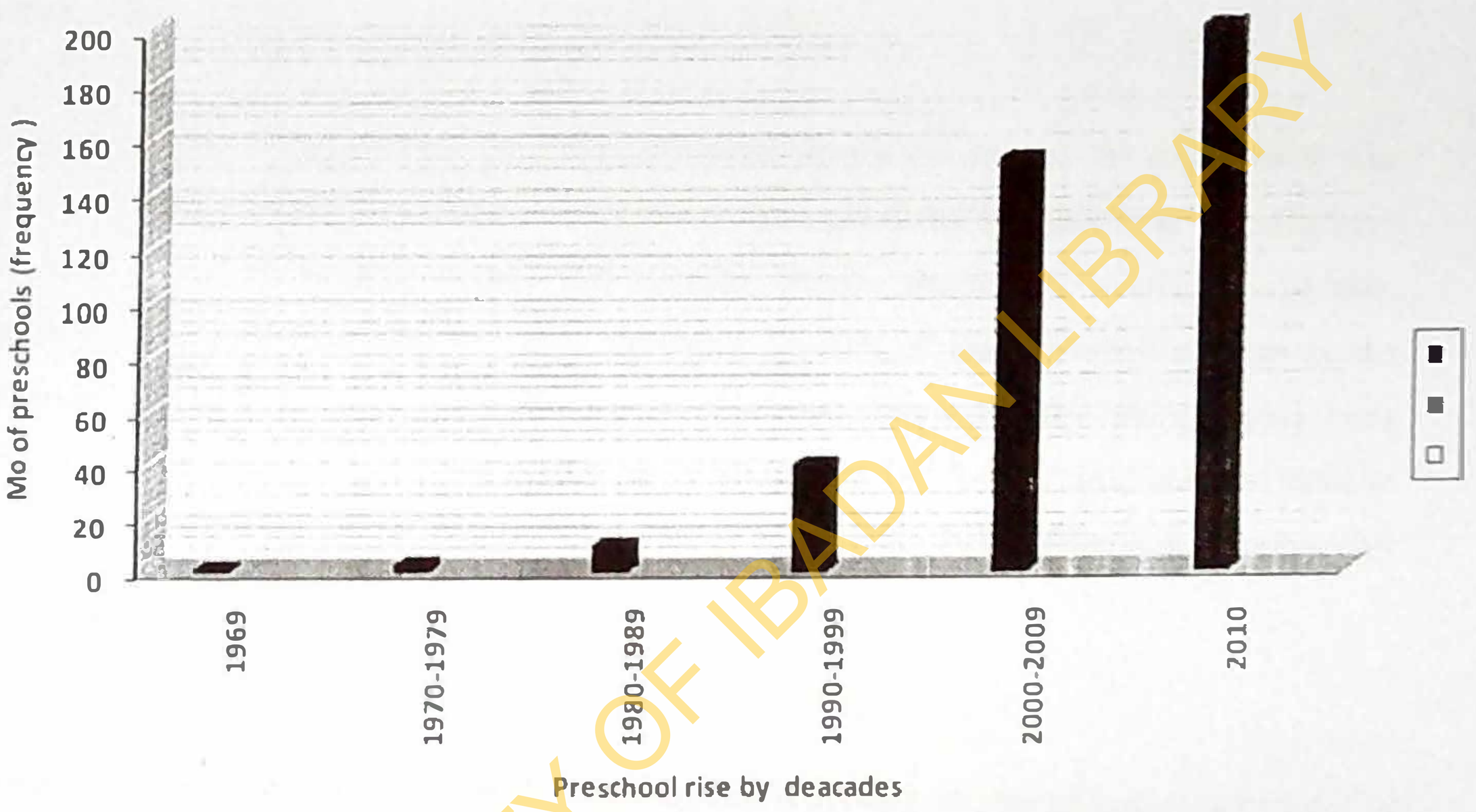

Fig. 1.1 Preschools establishment rate in Ibadan

Some preschools may adopt uneven and substandard measure such as overcrowding which may undermine the quality of childcare practices.

Practices relating to disease prevention in the daycares - feeding, toileting and personal hygiene - significantly affect the prevalence of vaccine preventable diseases. Unfortunately, this is poor according to studies done in Nigeria (Oyemade and Oyewole, 1981).

Complimenting practice of extending vaccination programs to schools is a worthy exercise. Worldwide, reports demonstrate significant effects of vaccination programs on disease burden but this have been less successful in reducing the disease burden in Sub-Saharan Africa, where coverage rates are lower (UNICEF 2005).

UNICEF (2005) estimates that more than 2 million people die around the world each year from vaccine-preventable diseases; 1.4 million of these are children under five, who die from measles, pertusis (whooping cough), and neonatal tetanus, despite the availability of safe, effective and available vaccines. This represents 50-60% of the estimated million deaths attributable to vaccine-preventable diseases of childhood. The morbidity and mortality rates of under-fives are high. For global a ranking of having the 14th lowest child survival rates in the world by the State of the World's Children, to achieve the 2015 Millenium development goal 4 target of 100% in Nigeria, a lot more has to be done.

1.3 Justification

A major concern when children are not immunized according to immunization schedules is occurrence of VPDs (Luman et al, 2005) and consequently morbidity and mortality in under-fives. Because vaccination remain one of the most simple and cost-effective preventive approaches to VPDs worldwide, emphases are being placed on innovative solutions and the need to expand on its methodology to increase its impact factor (UNICEF, WHO). Many immunization surveys and related studies aim at identifying enabling, predisposing and reinforcing factors affecting its effectiveness. Some initiatives had aimed at increased utilization of immunization while others had targeted on improvement of its services (WHO 1997).

Most of these studies had been focused on mothers : Mothers' Perceptions of Childhood Immunizations in First Nations Communities of the Sioux Lookout Zone Canadian (Marie and Gregory 2000); Parental knowledge of paediatric vaccination in Spain (Borràs et al 2009); Knowledge, attitude and practices of mothers regarding immunization of infants and preschool children at Al-Beida City, Libya (Bofarraj 2008) ; a study done in three districts

in Guanteng Province, South Africa studied knowledge, practice and coverage of immunization of mothers and healthcares providers involved in childhood immunization. Local studies in Africa explored 'Immunization coverage and its determinants in Primary healthcare center in Nigeria, (Odusanya, 2008); Immunization status of children of female traders in Bodija Market in Ibadan (Oladokun, 2008). National programme on immunization patronage in selected local government areas of Oyo state (Oyerinde, 2009).

None of these studies focused on the preschool care-givers who spend significant time with the children. No documentation on the adoption of immunization activities in schools especially in preschools. This can show schools in which immunization services are being refused and the reasons for refusal.

Some studies have found associations between knowledge of VPDs and improved childcare / management childhoodilnesses/practices. This study can reveal any knowledge gaps amongst preschool caregivers and guide training needs. It is essential to have a more recent quantitative assessment of the childcare practices related to vaccine preventable diseases especially in the highly dense areas of Ibadan (the central and core areas (i.e. the cosmo-metropolitan areas). The population density in the city of Ibadan is documented as one of the highest in the country.

Contributions from this study can be potentially used to inform the upgrading preschools. It can provide a proxy for the monitoring of immunization practices, common childhood illnesses and achieve child Millennium Development Goals (MDG) goal 4.

331.4 Broad Objectives

To assess knowledge of vaccine preventable diseases and childcare practices among pre-school caregivers in Ibadan, Oyo State.

1.4.1 Specific Objectives

1. Determine caregivers' knowledge of VPDs
2. Assess the preventive childcare practices in the preschools
3. Identify factors associated with preschool caregivers' knowledge of VPDs
4. Identify factors influencing the preventive childcare practices in the centres.

CHAPTER TWO

LITERATURE REVIEW

2.1 Childcare Givers

Care-giving is a responsible adaptation to societal challenges which could be medical or social. It is a global phenomenon and of extreme value. Broadly, Mosby's medical dictionary (2008) had defined a caregiver as a person providing treatment or support to a sick, disabled, or dependent. By the subsequent year with the review of the definition, there was the addition of the benefits of medical, social, economic, or environmental resources to a dependent or partially dependent individual, such as a critically ill person (Mosby's,2009). There is a tendency to undermine not only the medical and legal implications of caregiving but also the status of the caregivers as depicted by Saunders's use of the word 'lay individual' who assumes responsibility for the physical and emotional needs of another who is incapable of self care (Saunders,2003). In a broader perspective given by Mifflin (2004), caregivers were defined as those who assist in the identification, prevention, or treatment of an illness or disability by a physician, nurse, social worker, or teachers, highlighting further the various professions more associated with caregiving.

Caregivers are governed by federal and state laws, which vary by state. Various laws regulate eligibility and standards of conduct. The definition of caregivers by the United States legal Department, still hinged on the medical benefit, further elaborated that a caregiver is one who has significant responsibility for managing the well-being of a person diagnosed with a chronic or debilitating medical condition and equally provides an age limit of 18 years of age or older.

Caregivers had been defined variously. Most definitions clearly identify the older care recipients with medical challenges; however, before the first known use of the term caregiver in1966, formal and institutionalized types of daycare had appeared in France about 1840, and the *Société des Crèches* was recognized by the French government in 1869. Historically, daycares originating in Europe in the late 18th and early 19th century, were established in the United States by private charities in the 1850s, the first being the New York Day Nursery in 1854. Definitions involving preschool caregivers and their young care recipients who are

not ill were provided in 1994 and 2006 by an advisory committee made up of both the Child Development Research and Information Unit and the Administration for Children and Families, Office of Planning, Research and Evaluation, both of in the U.S. Department of Health and Human Services, Washington, DC. They had stated from their survey findings on the Early Head Start Research and Evaluation Project that childcare workers are individuals who take care of other people's babies, young children, and older children, usually while the children's parents or guardians are at work or away for other reasons.

Other job titles for these workers include Child Care Aides, Teaching Assistants, Instructional Aides, Nursery Aides, and Nannies. Other related names are carer, caretaker, guardian, foster parent, babysitter, minder, nanny or au pair (*also nannie*), nurse sitter, custodian, guard, keep, keeper, protector, attendant, chaperone (*or* chaperon) and companion.

Child Care Workers are found in family day care homes, child care centers, preschools, elementary schools, group homes and in private residences. The range of services could either be 'Centre Based' (kindergartens, play schools, nurseries and other facilities catering for children under three years of age) or 'Home-Based'. In formal daycare centers, childcare workers are sometimes assistants to pre-school teachers and are always under the direction of a day care director. The service is known as *child care* in the United Kingdom and Australia and *child care or day care* in North America or preschool; however, the use of these words is not uniform in various settings and it depends on the age group of the children and availability of space.

In Sweden, the preschool *(förskola)* cares for children while their parents are away working or studying or if the children have special needs of their own. Preschools are open all year round and operating on daily bases for the five working days except in family types of daycares. Children are registered and the parents pay a fee that in most areas is linked to the family's income and the child's attendance. Children are generally divided into groups of between 15 and 20. As a rule, three employees - preschool teachers and daycare attendants - are allocated to each group. The average preschool comprises three such groups (Skolverket, 2000).

In Nigeria, various adaptations in the names of childcare centres exist. It was earlier called the kindergarten and infant classes which consisted of groups of children usually not yet qualified for primary education. These schools are located in various places and buildings (Ejieh, 2006). Some were established solely as preschools or to run concurrently in

combinations with other higher academic levels such as part of a primary school or the whole spectrum up to university. The physical structures vary widely in terms of quality and aesthetics from one establishment to another, and so do the caregiver-child ratio and the available facilities.

A primary caregiver is the point person for all the care and decisions of a child. However, the tendencies for literature to ascribe the role of caregiving to mothers alone had been contested (Engle, 1990). According to her, the language should use the word "caregiver" rather than "mother". The notion that a child is the combined responsibility of both parents needs to be reinforced continually and at all levels.

This role, easily filled by mothers in the past, was supported by an adult child, often a female relative. The increased burden for caregiving has made it a family affair involving sons, husbands, grandchildren and neighbors. In cultures with high social network, for instance in Lagos, Nigeria, only 7.7% out of the 948 parents in a study by Makinwa Adebusoye sent their children to either a nursery school or a group care centre in 1981. A similar study by (Orebanjo, 1981) in the same year showed that half the working mothers in Ile-Ife which by then was a semi-urban settlement, preferred keeping their children with members of the extended family for child care than send them to day care centres or nursery schools.

The resources for care in these cases are human which include the caregivers' knowledge, beliefs, and education, and the physical and mental health and confidence to put that knowledge into practice (Johnsson. 1995). Recent trends reveal preferences for more structured options like the nurseries and preschools (Orebanjo. 1981; Skolverket, 2000; Borg et al, 2006). In these cases, the resources for care could be economic, or organizational. Johnsson (1995) recognised in a caregiver conceptual framework that alternate caregivers and community care arrangements, and emotional support from family members and community network are part of the organizational resources.

With the paradigm shift, secondary caregivers are spending more time with the children, and the practice of assigning a primary teacher to be responsible for the care of a child, providing infants and toddlers with an opportunity to develop a close, trusting relationship with a consistent caregiver who knows the child well, redefines the person as a primary caregiver (Borg et al, 2006). This is premised on the distinction provided by the operational definition of a primary caregiver as one giving more than 50% of care to the individual requiring

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placement. According to the theoretical definitions, caregivers not only look after the basic needs and support functional activities of the daily living of a recipient, but also function as advocates for the dependent individual within the healthcare system and the "society as a whole'' (Schaag and Smith, 2006).

In the schools, the academic engagements are the more obvious caregivers' tasks, but other tasks of equal importance include:

- behavioral - make sure children are safe and have good behaviour, teach children to understand other children, share and to be patient
- social - arrange and take part in indoor and outdoor play, encourage children to care for and pick up toys, books, and clothing
- health and hygiene related - following proper health guidelines, change diapers of infants and toddlers, assist in preparing and serving meals and drinks to children, teach children about good habits such as hand washing and proper toilet habits.

For preschool caregivers to effectively execute these duties, some important skills, knowledge, abilities and competences such as pro-active service, listening skills, monitoring, learning and problem sensitivity and identification are required. The ability to tell 'when something is likely to go wrong' and 'is wrong' are indispensable. Record keeping of the progress made by each child and the discussion on each child's needs with parents/guardians is equally a key practice. This feedback should include all the facets of the child's being: behavioral, social adaptations and health related issues.

The point of emphasis based on an ecological systems theory by Bronfenbrenner, (1979) is the holistic care of the child in a supportive continuum.

2.2 VPD prevention practices in Preschools

As new employees, the practices and standard of operation of establishments are usually guided by older employees. The framework of practice is embedded in policies which are either verbally accented to, documented or a combination of both, explicitly or implicitly done. A summary of the requirement from the policies is that a caregiver pay close attention to care needs of designated children during the activities of the day and is responsive to those care needs by way of appropriate practices. One of the newer practices of giving vaccines to children in the daycares/schools provides an opportunity to access large numbers of children and complement on the routine immunization. This approach is cost effective and a method of

boosting herd immunity thereby preventing infectious diseases particularly in this age group. Although, vaccines rarely protect 100% of the recipients, there is still need for caregivers to adhere carefully to additional precautions against infection, regardless of the vaccines or medication(s) that had been administered to the children, because the risk for the children to contract disease(s) against which they have been vaccinated persists. A wide variety of preventive measures under the various domains of childcare have significant links with VPDs: proper hand washing, toileting, feeding and food preservation, environmental sanitation and early detection of symptoms.

UNICEF in its 2008 fact sheet had established nutrition, hygiene and immunizations as the key factors in a child's immediate environment with bearing to improving health. These factors are as important as medical treatment. In a survey by Mehra, Kurz, and Paolisso (1992) that reviewed under five childrens' programs in three countries- India's Mobile Crèches, Senegal's seasonal day care centers, and Ghana's Accra Market Women's Association- all in developing countries and closely connected to the women's workplace - it was found that the amount of food served, the cleanliness of the locations, and the protection of the space resulted in significant effects on the children's health. That the children in daycare homes or preschools had lower rates of mortality and morbidity than their non-schooled mates suggests otherwise if not better than what obtains in the children's homes. Notably, center-based childcare for children under three years old is expensive to do adequately, and, if not well done, may be more damaging than the somewhat adequate homecare (Engle, 1990). The factors implicated for this not to occur require constant attention by all stakeholders.

Vaccination

Vaccination is the administration of a vaccine to stimulate a protective immune response that will prevent disease in the vaccinated individual if there is subsequent contact with the corresponding infectious agent. Thus vaccination, if successful, results in immunization of the vaccinated individual and invariably the person has been protected and rendered immuned to disease caused by the infectious pathogen. In practice, the terms "vaccination" and "immunization" are often used interchangeably. Routine immunization programmes protect most of the world's children from a number of infectious diseases that previously claimed millions of lives each year. Immunising a nation's children against diseases not only protects

them from disability and premature death, it also boosts productivity, reduces poverty, and supports the economic growth of a country (Ekanem, 1988).

2.2.1 Immunization Programme Practices in schools

The Expanded programme on Immunization (EPI) is a UNICEF/WHO scheme designed to expand the accessibility of immunization services to an increased number of children within the age range of 0 - 2 years. The programme aimed at combating the six common disease of childhood namely - measles, poliomyelitis, tuberculosis, tetanus, whooping cough and diphtheria (WHO, 1981). Similar to several reports, in Oyo state, Sorungbe (1985) revealed a negligible impact of immunization on the morbidity and mortality rates arising from the target diseases. He observed further that only 15 - 20% coverage was demonstrable. To ensure increased patronage, the EPI included educating individuals and mobilizing governments to adopt health policies that through a community approach are aimed at pwrotecting children and mothers. In response, Oyo State government deployed series of health education and enlightenment programmes on radio and television. The programme was further reinforced through widespread display of posters that educate the public on the essence of immunization for children by the Ministry of Health.

In 1985 and 1989, federal government and Oyo State government respectively declared some days as National Immunization days (NID) and as State Immunization Days (SID) and immunization took the form of outreaches to cover the hard to reach places. On those four designated days, the trained vaccinators (usually locally sourced) along with independent supervisors go to mapped out enumeration units to have the children vaccinated.

National Immunization Activities

- **Routine immunization**

  The L.G.A.s immunization officers collect from the central cold chain store at Jericho for children in their various jurisdictions. At the LGA facilities, active immunization services are done.

- **Supplemental immunization**

  Combines the state immunization activities of routine immunization days and National Immunization plus days for four days to provide opportunities to reach more children. The target clusters include the preschools, churches, house to house administration.

- **Mop up immunization**

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2.2.1 Immunization Programme Practices in schools

The Expanded programme on Immunization (EPI) is a UNICEF/WHO scheme designed to expand the accessibility of immunization services to an increased number of children within the age range of 0 - 2 years. The programme aimed at combating the six common disease of childhood namely - measles, poliomyelitis, tuberculosis, tetanus, whooping cough and diphtheria (WHO, 1981). Similar to several reports, in Oyo state, Sorungbe (1985) revealed a negligible impact of immunization on the morbidity and mortality rates arising from the target diseases. He observed further that only 15 - 20% coverage was demonstrable. To ensure increased patronage, the EPI included educating individuals and mobilizing governments to adopt health policies that through a community approach are aimed at pwrotecting children and mothers. In response, Oyo State government deployed series of health education and enlightenment programmes on radio and television. The programme was further reinforced through widespread display of posters that educate the public on the essence of immunization for children by the Ministry of Health.

In 1985 and 1989, federal government and Oyo State government respectively declared some days as National Immunization days (NID) and as State Immunization Days (SID) and immunization took the form of outreaches to cover the hard to reach places. On those four designated days, the trained vaccinators (usually locally sourced) along with independent supervisors go to mapped out enumeration units to have the children vaccinated.

National Immunization Activities

- **Routine immunization**

  The L.G.A.s immunization officers collect from the central cold chain store at Jericho for children in their various jurisdictions. At the LGA facilities, active immunization services are done.

- **Supplemental immunization**

  Combines the state immunization activities of routine immunization days and National Immunization plus days for four days to provide opportunities to reach more children. The target clusters include the preschools, churches, house to house administration.

- **Mop up immunization**

This is carried out in cases of an outbreak or epidemics. On such days, vaccination centres were opened in schools, churches, mosques, market places, parking lots, motor parks and other public places to bring immunization services closer to the masses, particularly, the nursing mothers. Through these activities, EPI became more popular as one of the health care delivery programmes in the country (Adetifa, 1989). For all the missed opportunities, children who are unimmunized from home would be immunized.

Before the National immunization plus days, schools played complementary parts in augmenting herd immunity amongst the children by making complete immunization of children a prerequisite before admission. The immunization cards are checked mandatorily for school registration. A strategy which has recently been adapted to strengthen routine immunization in Nigeria is the Reaching Every Ward (REW) approach which require that states with poor accessibility should ensure that cold chain , vaccines injection, equipment and logistics are available in all static immunization sites(NPI, 2005).

Internationally, available data from the United States, Sweden and Australia reveal increasing difficulty insisting on the checks of immunization cards for registration because there is increasing refusal by parents of immunization due to its association with autism before the misconception before it was disproved by another research (Hamilton.M, Corwin.P et al. 2004).

2.2.2 Vaccine Preventable Diseases (VPDs)

A vaccine-preventable disease is an infectious disease for which an effective preventive vaccine exists. If a person acquires a vaccine-preventable disease and dies from it, the death is considered a vaccine-preventable death. Globally, VPD represents 14% of total mortality in children fewer than 5 years of age (CDC, 2004). In 2002, WHO estimated that 1.4 million of deaths among children fewer than 5 years were due to diseases that could have been prevented by routine vaccination (CDC, 2006).

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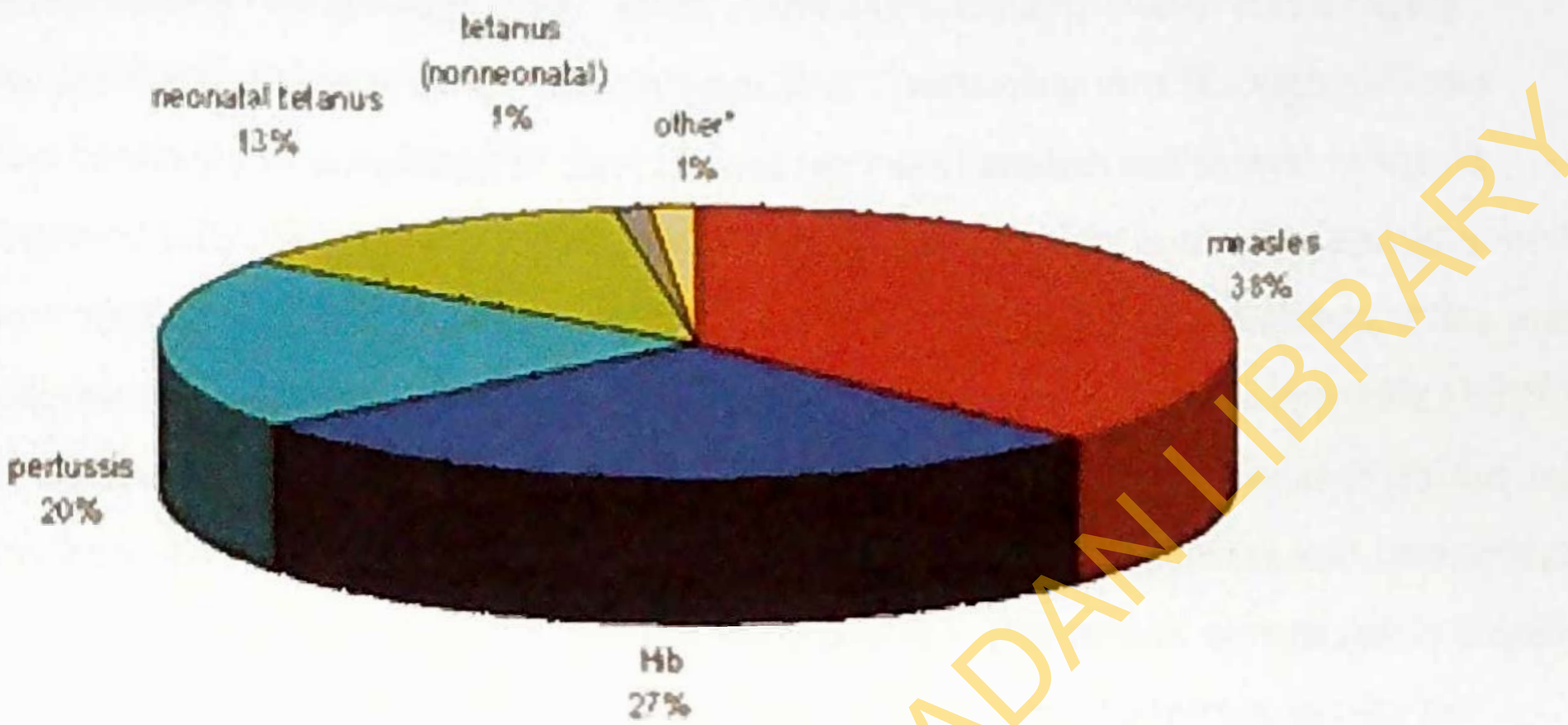

* other – polio, diphtheria, yellow fever

Source : WHO/CDC

Figure 1.2: Mortality Rate of a Few VPD's Worldwide.

Common Vaccine Preventable Diseases

The most common and serious vaccine-preventable diseases tracked by WHO (1987) are: diphtheria, Haemophilus influenzae serotype b infection, hepatitis B, measles, meningitis, mumps, pertussis, poliomyelitis, rubella, tetanus, tuberculosis, and yellow fever.

Measles

Measles (rubeola) probably the best known, is a leading cause and most deadly of VPDs in children world-wide (CDC, 2009; Aaby and Clement, 1989). It is a highly contagious disease caused by the paromyxoviridae. Transmission is through airborne droplets (sneezing or coughing) or direct (close personal) contact with nasal or throat secretions of infected persons. For clustered settings like the preschools, transmission could be more widespread. Its complications of malnutrition, xerophthalmia, diarrhea, otitis media, bronchopneumonia, encephalitis and rarely sub-acute Sclerosing Pan-Encephalitis (SSPE) add to the burden of the disease. Measles is one of the diseases marked for eradication and this can be achieved according to UNICEF - Global Alliance for Vaccines and Immunization, (2003) through 'a comprehensive immunization strategy. Prevention of measles is largely by using live attenuated viral measles vaccine - one dose given by the intramuscular or subcutaneous route (Singh et al, 2002).

Tuberculosis

Tuberculosis (TB) is caused by Mycobacterium tuberculosis. It progresses rapidly, although the initial infection may be silent and last for a lifetime. Some cases from pulmonary TB, the commonest site, disseminate to meningeal or other extra-pulmonary diseases. TB risk is highest in children younger than three years old and in older people as well as, those with weakened immune systems (Standard treatment guidelines for Nigeria, 2008). It is estimated to result in 2.6 million deaths worldwide annually and 3.8 million notified cases. Cases especially in children have escalated.. Clustered populations like the preschools increase the likelihood of infection. The study on primary tuberculosis infection in 35 daycare center children in Sweden had thirty-two of 53 attending and 3 of 84 visiting exposed preschool children infected by contact with one of their day care providers (Gillman, 2008; Berggren et al, 2008). Prevention of tuberculosis is by immunization of infants at birth with Bacille Calmette.

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Poliomyelitis

Polio, a highly infectious crippling disease caused by any one of three related poliovirus types: 1, 2 or 3. It is a disease that may cause irreversible paralysis (commoner in children) in less than 1% of infected individual.

The healthy practices and early intervention when a child is ill in preschools may avert the complication of polio infection especially because transmission spreads from person to person principally through the faecal-oral route particularly in areas with poor hygiene practices. In preschools, caregivers have to change diapers regularly. Studies in Nigeria have poor hygiene in the daycares. Children who have suffered permanent paralysis from polio may further suffer social handicaps and stigmatization particularly at school. In 1988, World Health Assembly established the goal of eradicating poliomyelitis by the year 2000. Prevention by giving live oral polio vaccine (OPV) given as drops in four doses is the main strategy for its eradication in endemic countries (Standard treatment guidelines for Nigeria, 2008) or inactivated polio vaccine (IPV) by injection - two-three doses depending on country schedule.

Tetanus

Tetanus is an acute and often fatal disease caused by the neurotoxin produced by a ubiquitous organism found in soil- Clostridium tetani. Injuries are usually sustained in the course of playing in preschool. Child injuries rate worldwide was 4% (UNICEF, 2005). Injuries are usually sustained in the course of playing in preschool. The wounds can get contaminated at that instance or subsequently with soil or animal/human feces which are peculiar daily processes in preschools. Tetanus germs are likely to grow in deep puncture wounds caused by dirty nails, knives, tools, wood splinters, and animal bites. Prevention is achieved by giving Toxoids as DTP, DT, TT or Td - at least three primary doses given through intramuscular route (Singh et al, 2002).

Diphtheria

It is caused by exotoxin-producing strains of the bacterium Corynebacterium diphtheriae, is an acute bacterial infection of the nasopharynx and is usually transmitted from person to person through close physical and respiratory contact. Symptoms may lead to breathing difficulties or infection of the skin or mucosal surfaces, heart and central nervous system damages when its toxins are disseminated. Administration of DPT as outlined above for tetanus is given for prevention (Singh et al, 2002).

Pertussis

Pertussis, or whooping cough, is a disease of the respiratory tract caused by bacteria that live in the mouth, nose, and throat. It affects individuals of any age; however more severe in young infants. Pertussis is spreads very easily from child to child in droplets produced by coughing or sneezing spells that last four to eight weeks (Standard treatment guidelines for Nigeria 2008). When caregivers are aware of the symptoms of pertussis and other respiratory diseases, cough spells and its chronic nature can be easily identified and early interventions are instituted. Prevention of pertussis is by giving inactivated whole cell wP or acellular aP vaccine - at least 3 primary doses, given by the intramuscular route, combined with diphtheria and tetanus toxoid.

Other Preschool Caregivers practices

2.2.3 Hand washing and environmental sanitation

In preschool centers many processes involving the children require hand-washing. . In Sweden, according to the Health & Safety in Family Day Care: Model Policies & Practices, 2003, hand washing which should involve cleaning of nails is compulsory for caregivers as they using the toilet, arrive at and leave from work. This must be done after contact with soiled clothing, and dish cloths or after handling food or utensils, toileting children, wiping children's noses or their own noses, food preparation and serving. In cases of suffering from any gastrointestinal illness, they should avoid having contact with work surfaces and are not to prepare food until at least one full day after recovery, or from any hand infection to avoid it spreading to the preschool children. Caregivers are required to adhere to these practices which reduced morbidity amongst the children. According to WHO, of the estimated total 10.5 million deaths among children under 5 worldwide, 45 percent occur in the Africa region (Bryce et al, 2005) which is seven times higher than that in the European region (WHO 2005).

In a behavioural study of hand washing with soap in peri-urban and rural areas of Peru September 2004, Prisma reported that 60% of the respondents associated the occurrence of diarrhoea in children to the fact that they ate something dirty, 38% believed the food they ate was the source. 18% believed it was due to infection. Other propotions were lower as 16% attributed it to poor hand washing techniques, 14% to cold, 13% each implicated dirtiness and children drank untreated water.

Hand washing has been documented as one of the most important measures for preventing the spread of pathogens (CDC, 2009). Hand washing is defined as the vigorous brief rubbing together of all substances of lathered hand followed by rinsing under a stream of water. This mechanically dislodges micro-organism there by lessens the transmission of pathogens to food. water and other people. External factors affect hand washing such as caregiver's level of education, religious and cultural beliefs, age of mother, ethnicity, sex and age of child, income, and adherence of caregiver to give guidelines are some of these factors, percentage of time caregiver spend with child (Beth Scott et al) continuous availability of water, availability of clear guidelines on hand washing and hand washing products such as soap have also been noted. The art and act of hand-washing itself is modifiable but from previous studies it had been inappropriate.

In a Nigerian study by Akinbanmi (1998) of preschools in Ibadan metropolis characterized by zones, he observed that out of 40 caregivers studied, none of the caregivers in the inner core zone washed their hands after sweeping the floor, 3(18%) rinsed their hands with water alone before food preparation, 6(40.0%) washed their hands with only water. Toileting accounted for one of the highest proportions of hand washing episodes in other outer zones but it was done only in one episode 1(6.7%) in the inner core. Similarly, an interventional study conducted by (Ebuehi, 2007) in two local government areas in Osun state showed that less than half of caregiver in both LGAs reported hand washing with soap after attending cleaning up a child who has passed a stool; this hygiene level was related to the misconception that a child's faeces is not harmful (Ebuehi, 2007). The study involved comparison of a local government area that had adopted C-IMCI (community based integrated management on childhood illnesses) and another community that did not. Residents in the LGA in which C-IMCI had been implemented demonstrated better knowledge and improved practices than their counterpart with respect to hand washing practice.

Yet, in a baseline study conducted in Ona-Ara LGA in Oyo State, Nigeria, in 1995, the hand washing practices and environmental condition of 549 mothers of 638 children aged less than 5 years were observed. 57% were not cleaned after defaecation and those that were cleaned, 25.7% were cleaned with water alone. 33% of the mothers did not wash their hands at all, while in more than half, hands were washed only with water after defecation. Hand washing was done in only one-third (29.3%) of the observations when faeces were disposed (Omotade

et al, 1995). Bredekamp (1993) had observed a decreasing probability of caregivers washing their hands with increasing number of nappies to be changed.

2.2.4 Nutrition

Food, health, and care are all necessary for healthy survival, growth, and development, according to the UNICEF conceptual framework (1990). Demographic transition, epidemiological transition explains and describes the varying transitions that man undergoes in terms of lifestyle changes and patterns of diseases seen within social context. Particularly nutritional transition defines the way we eat and move and subsequent effects on our body composition over man's history (Popkin, 2006). Current research focus describes postulation that nutritional events can reset metabolic phenotype in ways that make people especially vulnerable to influences of an e.g. obesogenic environment if they escape from period of food reservation (subsistence living). Pickwikians genetic explains dietary impact from childhood to adulthood resulting non-communicable diseases. For Africa, it is a 'double burden' of both communicable and non-communicable diseases. The drivers of these trends include urbanization, stress, inadequate nutritional knowledge, lifestyle, culture and poor dietary choices-fast food (Reddy, 2005). The healthy foods are usually bland and may be expensive e.g. olive oil, oilseeds. Food packs are made for the children to school and because children are incapable of providing meals, these lifestyles transcend to them from as early as commencing complementary feeds and beyond. The question is '*how healthy are the food packs?*

Nutritional imbalance may result as obesity and malnutrition .when there is inadequate supply. In1992, China recorded national average of 3.4% and 2.0% prevalence of overweight and obesity respectively in children less 6years in preschools. They equally had micronutrient deficiencies (Shi-a n Yin, 2008). These risk factors may serve as precursor or necessary causes for the initiation of non-communicable diseases like obesity, hypertension, dyslipideamia, type 2 Diabetes Mellitus (DM) and cancers later in future hence need for nutritional counselling, rehabilitation and dietary monitoring for children especially for those with genetic predisposition.

Breast feeding

Exclusive breastfeeding of infants under 6 months of age is an example of a practice that provides care, complete nutrition and immunity against childhood illnesses like diarrhoea and pneumonia simultaneously. It lowers the risk of death in infancy and early childhood (Bahl et al, 2005). Several studies have found similar correlations between constant variables and the health implications for a child either outside or inside of the daycare centres. Care practices and child growth and development examined for example by Galler et al (1998) against its effect on feeding practices and child growth in Barbados, showed that feeding practices such as breastfeeding preference and feeding intensity predicted later growth.

Working class mothers who are convinced about exclusive breastfeeding may have initiated it but find it difficult to complete six months as they come to terms with the possibilities/ challenges to its exclusiveness. At this point, community support and beliefs may influence the capability of achieving exclusive breastfeeding (WHO, 2003). Other threats such as risk of transmission of Human immunodeficiency virus (HIV) for infected mothers may have reduced commitment to breast feeding. It was pertinent at such instancesto have more but appropriate supportive roles to provide information and support for mothers, at home and healthcare facilities at the community level.

In Nigeria, breast feeding rate is low at 13% according to the National Demographic and Health Survey (NDHS) 2008 for babies in the first six months of life. The criteria for assessing this survey must have evaluated quality of breastfeeding as prescribed by the WHO as it appears that many children are breast fed but not adequately.

In 1990, World Health Organization (WHO) and United Nations Children's Fund (UNICEF) beckoned on all stakeholders to promote, protect and support breastfeeding at all levels by making the Innocenti Declaration. On the same credence, Baby-Friendly ™ Hospital Initiative (BFHI) and Global Strategy for Infants and Young child Feeding were commenced in 1991 and from 2000 to 2002 respectively (WHO, 2003). The latter proposes three strategies that target breast feeding practices at birth, during the exclusive 1-6 months and complementary feeding periods. The second and third points have significant bearings for preschool first timers and older children because it is characterized by separation from familiar faces and quality breast feeding, introduction of complementary feeds, exposure to higher risks of infection, and all the other attributes of preschools.

For children older than 6months, the recommendation is for breast feeding to continue despite introduction of complementary feeding till up to two years. There may be conditions

in which breastfeeding may be contraindicated or its exclusiveness difficult to attain, children who are not exclusively breastfed would, according to World health organization in its publication, *The Role of Caring Practices and Resources for Care 141*' benefit from high quality complementary food from about the sixth month onward (WHO, 1998).

Eating patterns are culturally determined and varies widely. Force-feeding is accepted in some communities. Caregivers in a bid to have done their job may be obliged to result to force feeding after seeing that a child is refusing to eat. A better approach may be to enhance food quality, show of affection and warmth to encourage the child to eat when hungry. Regular and frequent feeding timings may be helpful.

2.2.5 Food storage and preservation

Food preservation within the time period recommended usually lapses before lunch pack is served to the children at the daycares. Ideally, in accordance with the Food Standards Australia and New Zealand (FSANZ Fact Sheets), food should be consumed as soon as it is cooked to 60°C or higher, and left over food should immediately be stored in the refrigerator at 5°C or lower considering the tendency for it to become contaminated as soon as it starts cooling, it is recommended that it is allowed to cool enough to be safe for children to eat but no longer than two hours. Most times children get to school about 7.30 a.m with breast-milk/ food packs that are to be taken during break times which are usually three hours afterwards for morning break and seven hours after for lunch break.

Food preparation and serving areas should be cleaned and sanitised at the end of each day using neutral detergent and water to remove visible contamination such as food waste, dirt and grease, then this should be sanitized using either heat or chemical sanitizers that are suitable for use for food contact surfaces. Chemical sanitizers must be used according to supplier or manufacturer's instructions.

For Microwave food safety should be ensured by:

Being aware that microwaves are useful for defrosting, cooking and re-heating foods however, food borne diseases can also result if the usual rules of food safety are not followed. Defrosting in a microwave also partially cooks the food and makes an ideal medium for growth of bacteria. Dietary Guidelines for Children and Adolescents in Australia incorporating the Infant Feeding Guidelines for Health Workers, NHRC, 2003 and Australian

Breastfeeding Association documents extensively information on breastfeeding and provide comprehensive guidelines on food safety and management.

Principles in preparing infants' bottle feeds- Milk bottles should be in the refrigerator, not in the door of the refrigerator and only sterilised bottles and teat assemblies should be used for all infant feeds. Caregivers are expected to wash their hands before preparing or handling expressed milk or formula. Formula preparation should strictly be according to instructions on the container. Microwave in settings where it is used should not be used for heating expressed breast milk, formula milk, or any bottled milk or fluid.

Bottles should be warmed by standing in warm/hot water and only once. The temperature of the milk should be tested on your wrist before giving it to the baby and it should be discarded if leftover after each feed or 30 minutes of not being consumed.

Guidelines in relation to bottled breast milk

Caregivers are to ensure bottled breast milk is always labelled with the child's name, mother's name and the date it is expressed. Breast milk can be stored in the refrigerator for 48 hours and in a deep freezer for up to 3 months. Frozen breast milk can be thawed by placing in either cool or warm water. It is not to be put in boiling water as the milk will curdle, and shake the bottle if the fats and milk have separated. Ideally, these should be thawed under running water, starting with cold water then increasingly warm water and not to be refrigerates or refrozen once it has been thawed. Caregivers are to test the temperature of the milk on your wrist before giving it to the baby.

Unused breast milk should be discarded. After use, teats and bottles should be rinsed with water, wash in hot soapy water, rinsed with water, then sterilise them by using a cold water chemical steriliser, following the manufacturer's instructions, then air dry.

Caregivers are to avoid direct touching of ready to eat food by following proper food handling technique and using clean implements and gloves. It similarly specifies that all food or bottle preparation and storage areas are separate from nappy change and toileting areas (FSANZ Fact Sheets).

2.2.6 Early detection and Treatment of illnesses

Children when they commence preschools have newer infection patterns and increased risk and rates of infection more than when they were at home (Kazemi et al, 2006). Caregivers with keen observational skills may therefore provide valuable information on a child by detecting at an early stage any change from normal in the index child. Australia for example

has a well developed childcare system. Its guidelines involve all facets of childcare, elaborating on immunization, reporting of diseases and protocols on the management of a few childhood emergencies. This would help the caregivers to better recognize early signs of complications and deal with health issues promptly when they arise (Skolverket, 2000).

The practice in Malta is different. When a child becomes ill or has an accident in preschools in Malta is to immediately inform the parents and the child's carer will remain with the child until the parents' arrival (Borg et al, 2006). In both cases, there needs to be a forum for discussion of these symptoms or health related problems and consent from parent so that institution of treatment can be early enough. This may be through direct discussions with parents, sending of a report or during the parent-teachers association.

2.2 Vaccine-preventable diseases and deaths: Newer Strategies & Interventions

Globally, with reference to prior realized immunization gains, VPDs and deaths remain public health issues for many reasons. In Nigeria, since the mid-1990s, there had been fluctuations in the address of vaccine-preventable diseases. Of significance is the emerging status of Nigeria as the country with the highest number of Wild Polioviruses (WPV) in the world.

Because vaccination is one of the most simple and cost-effective approaches worldwide especially in developing countries, emphases are being placed on innovative solutions and the need to expand on its methodology to increase its impact factor (UNICEF, WHO). Guided by the conceptual framework modelled by Babalola and Lawan (2009), many researches are being directed at other significant stakeholders and priority groups (children less than five years of age). In Africa, the strategy of making advocacy campaigns a national priority in each African country was advocated by the African Vaccine Preventable Diseases Network to discourage myths and misconceptions pertaining to VPDs and making the diseases well known to all levels of society.

Some intervention studies and strategies had explored improving on infrastructure of the daycares and its attendant effect on the health outcome of the children (Cohen et al, 2000, 2003). Besides the absence or inadequate supply of infrastructure especially in resource poor countries, a number of these countries like Cuba have demonstrated what can be accomplished through campaigns to educate primary caregivers on better health practices such as importance of boiling water, immunization and breastfeeding. Mass media was used with evident reduction in child mortality rates despite economic crisis and very low incomes.

Drawing further on literature, interventions that support families and communities in preventing disease and caring for their children are required to combat the unmet needs of achieving the fourth Millennium developmental goal- reducing child mortality (Department of Economic and Social Affairs and Division, 1990-2005). The strategy of empowering mothers and the *community* on childcare disease prevention practices is a key thrust of the integrated management of childhood illnesses. It is a mechanism aimed at prevention, early detection and treatment of leading childhood killer diseases from a three- prong approach: the caregivers, community and healthcare providers (UNICEF /WHO; Nicoll 2000). In a study done in three districts in Guanteng Province, in which the knowledge, practice and coverage of immunization of mothers and healthcares providers involved in childhood immunization was assessed. The level of knowledge of immunization of supporting roles like fathers, siblings, grannies and housemaids were identified by Ravhengani et al, (2007) are equally important. In another study done in Burkina-Faso, godmothers' active participation assisted families to bring their children for vaccination in order to overcome barriers faced by mothers and this resulted in improved attendance at the vaccination clinics (Robert Kargougou et al, 2007). The prevention of childhood diseases would need to involve an expanding role for other relevant stake-holders. In this case, the stakeholders are the preschool caregivers who for many reasons are strategic to the prevention of diseases.

2.3 Preschool care-givers knowledge of VPDs

Most studies on knowledge of vaccine preventable diseases were observational surveys and mainly on mothers (Ravhengani et al, 2007; Bofarraj, 2008; Odusanya, 2008). Questions asked explored the knowledge of vaccination schedules; the vaccines and its awareness. Some immunization surveys aimed at identifying groups of population that are not getting immunized and the reasons responsible for non immunization.

Vaccines studied were mostly those recommended in routine vaccination schedule in the study regions: diphtheria, tetanus and whole-cell or acellular pertussis (DTPa/w), trivalent oral polio (OPV), Haemophilus influenzae type b (Hib), conjugated meningococcal C (MenC) and measles, mumps and rubella (MMR) vaccines.

In those studies, composite knowledge of VPDs was assessed by using a scoring system. This implied that marks were attributed to correct responses by the mothers in the assessment of questions related to the knowledge on the vaccines, vaccine preventable diseases and immunization practices. The study by Odusanya (2008) in Nigeria gave points for different

domains based on responders' ability to correctly state the purpose of immunization. Using only measles and polio, he assessed knowledge of appropriate age for a child to receive measles vaccination, the number of times to receive polio, and complete vaccinations. The other domain included knowledge of at least three symptoms of vaccine preventable illnesses. The symptoms of interest were cough, skin rash, jaundice, paralysis, very high fever and difficulty in breathing. This scoring system is similar to that reported by some other researchers. In Catalonia, in a study by (Borràs et al, 2009; Domínguez. et al, 2009), parent's knowledge of vaccination was scored by counting the number of correct answers to nine questions (maximum score 9 points). In another study done, in three districts in Italy, by Angelillo et al, (1999), all the questions about knowledge and three of the questions about attitudes were scored on a three-point likert scale with options for ``agree", ``uncertain", and ``disagree"; the other questions about attitudes on the utility of vaccinations were scored on a 10-point likert scale with options ranging from ``1" (low utility) to ``10" (high utility). All the behaviour responses and one of the questions concerning education were in 'yes'/ 'no' format (Angelillo et al,1999). The knowledge questions on VPDs were few.

The use of the mean score to measure the knowledge level of VPDs for the specified population was a dominant approach. In Catalonia, in a study by Borras, (2009), the mean, median and standard deviation (SD) of the parents' scores were calculated and maternal responses were validated by checking data contained in the child's vaccination card (Odusanya, 2008; Ravhengani et al, 2007).

Diversity in what can be termed as knowledge questions on VPDs and the outcomes of researches were dependent on predetermined research focuses and objectives thus there may be difficulty in assessing and comparing outcomes on a uniform platform. However, most of the studies reported generally, positive attitudes toward vaccines in the prevention of VDPs even when they knew little about it. This did not necessarily translate to negative attitudes in mothers attending the Primary health care clinic (PHCC) in Al-Beida city, Libya for vaccination of their children for a month (Bofarraj, 2008). Spanish studies equally show positive parental perceptions to vaccination (Reuters, 2009).

Mothers tend to view health related interventions with skepticism but this may resolve to positive use or attitude when there has been a bad experience of the disease in the absence of the intervention or with the awareness and appreciation of the benefit therein (Health belief

model). Point of acceptance of immunization for some caregivers may then include desire to prevent diseases in their children and doing what other people do.

In Italy, mothers were aware of all four mandatory vaccinations for infants -poliomyelitis, tetanus, diphtheria, hepatitis B (Angelillo et al, 1999). The knowledge levels were overall higher than fifty percent as was similarly found in the study done by (Ravhengani, 2007). This prevalence was higher in a Nigerian study on the determinants of vaccination Coverage in Rural Nigeria in which three hundred and thirty-nine mothers and children were studied. Most of the mothers (99.1%) had very positive attitudes to immunization and over fifty percent were generally knowledgeable about symptoms of vaccine preventable diseases except for difficulty in breathing (as symptom of diphtheria). Composite level of knowledge was satisfactory (Odusanya , 2008). In the study done a year afterwards in Spain, about 20% of the people interviewed did not know what measles was (24 caregivers), and 69.6% (85) simply said, "It is a disease, 40 (47%) knew of the disease (Borràs et al, 2009).

2.4 Factors affecting knowledge and practice of caregivers in preschool

Educational status of responders in several studies has been positively correlated with knowledge of VPDs and improved immunization and childhood practices (Angelillo et al. 1999), in the United States (Taylor et al, 1997) and (Luman et al, 2003). Although a survey in Spain using data from the National Survey of Health 1993–2003had contrasting results for parents with higher educational levels (Bofarraj, 2008). They not only have lesser knowledge of routine vaccines but had lower rates of children being vaccinated against the VPDs.

Some factors shown to affect vaccination negatively include conflicting economic implications for most caregivers. Vaccination benefit is weighed against economic costs affects utilization of immunization services event when it is accessible. Cultural belief in the efficacy of local herbs is a documented factor. Others factors include fear from previous side-effects, non availability of vaccines, forgetfulness, birth order and lower educational level (Bofarraj , 2008; Fredrickson et al, 2004; Hamilton et al, 2004). Contributing is the erroneous belief that missing a single injection will not harm their child who has had one or two of the four boosters required for polio especially when this is being considered with economic costs (Mansoor, 2007). These gaps may be bridged by preschool caregivers using the school as an avenue to educate mothers on the benefits of immunizations and further encourage immunization exercises in the schools.

CHAPTER THREE

METHODOLOGY

3.1 Study area

This study was conducted in Ibadan, capital city of Oyo state. It is located in south-western Nigeria, 128 km inland northeast of Lagos and 530 km southwest of Abuja, the federal capital and is a prominent transit point between the coastal region and the areas to the north. The city stands at an altitude of 152,213 with isolated ridges and peaks rising to 274m (Sridhar and Ojediran, 1983). It is noted for the many notable institutions in the financial and telecommunication, academic, research and health sectors.

Its central location gives it transport and economic advantages which explain its growth in all ramifications and as such has a unique mix of culture, population and developmental blend. The population of Oyo state as 5.6 million is documented as the fourth most populous state (3.9%) in the country (National census, 2006) after Lagos, Kano and Katsina.

According to the same census, the population of Ibadan was 2,550, 593 people (National Population Commission (NPC), 2006). It is a typical picture of many African cities. It is the second largest city in Africa. The highly dense areas of Ibadan are in the central and core areas i.e. the urban Local governments (LGs) (Oyo state Government and Unicef B Zonal office,1977).

About half of the city is constituted by this core area and is characterized by essentially slum dwellings characterized by a high population per household ratio and a higher percentage devotion of area to residential land use, as high as 90 percent in some areas (Olaniran, 1998). Ibadan is made up of both densely populated areas (the interiors) and the moderately populated areas.

It has been documented that there are a total of 11 local government areas for administrative purposes. This consists of 5 inner core local government areas and 6 surrounding Local Government Areas comprised the Ibadan metropolitan area. Ibadan Metropolis is located in the southwestern part of Oyo state. The five urban local government areas were used for this study namely: (1) Ibadan north; (2) Ibadan northwest; (3) Ibadan northeast; (4) Ibadan southwest; (5) Ibadan southeast. The Oyo State secretariat is situated in Agodi, Ibadan North local government Area (LGA).

(appendix i & ii- map of the study sites)

3.2 Study Design

This study was a cross-sectional survey with minimal exploration on the knowledge of vaccine preventable diseases and childcare practices amongst preschool caregiver, Ibadan, Oyo State.

3.3 Study Population

This consists of caregivers who work in the designated preschools in the selected communities.

3.4 Inclusion criteria

-Study included teachers and caregivers in the study population in the context of the operational definition for caregiver as any worker in the facility who is involved in the daily activities of the children to the educational, nutritional and hygiene status of the children under five years of age (Schaag and Smith, 2006; Mosby's, 2009).

-Only willing participants were involved in the study

-Caregivers with more than one week work experience

3.5 Exclusion criteria

-Other staff members for example administrators, sweepers, food –vendors, security guards in the preschools were not involved.

-Suspicious caregivers and unwilling to participate in the study

-Caregivers who were absent from sick or vacation leaves.

3.6 Sample size determination: : The minimum sample size required for the study is derived from the Leslie Kish's formula for estimating single proportion:

$n = Z_{\alpha}^2 pq/d^2$

where

N = minimum estimated sample size

Z-α = standard normal deviate ($Z_{1-\alpha/2}$) corresponding to 95% CI, usually set at a value of 1.96

Z-β = power of the study

P = 0.5 (Proportion of caregivers who have good knowledge of VPDs). In this study, 50% was a considering that studies done in the past had been focused on mothers).

Q = 1-P

d = Desire degree of accuracy (degree of allowance of error set at 0.05)

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

N = 384 caregivers (minimum sample size)

Sample size with design effect added due to cluster sampling at the last stage of the multiasatge sampling technique

Anticipated non response rate – 768/ 1-0.1

Minimum sample size with anticipated non response rate = 853

3.7 Sampling Technique

Multiple stage sampling technique was used.

Stage 1: The five urban local Governments areas (LGA) within Ibadan metropolitan were purposively selected, namely

1. Ibadan North LGA
2. Ibadan North East LGA
3. Ibadan North West LGA
4. Ibadan South West LGA
5. Ibadan South East LGA

(*appendix i- map of the study sites).*

Stage 2: Each local government has wards (*see appendix ii*). One settlement was selected by balloting from the settlements in the wards. All caregivers within the schools in those settlements were interviewed. It was established from preliminary survey that on the average, 4-7 caregivers work in most preschools and there are over 200 registered preschools in Ibadan.

3.8 Data collection instrument

Data collection instrument was adapted from the WHO surveillance assessment questionnaire on reducing Child Mortality/ health status of children (MDG 4) for mothers/caregivers of under-five children and the National primary immunization training module for routine service providers- Trainers' guide (2007). The semi-structured questionnaires developed were administered by six trained field assistants who were fluent in English and Yoruba languages. *(See appendix iv).*The training of the research field assistants lasted two days on March 24

and 25, 2010 from 8.30a.m- 2.30pm. Each field research assistants took up role-plays during the training. This help to enhance on their interviewing skills and correct some misinterpreted questions. The training schedule and handout are included as (*appendix v & vi)*. The questionnaire contains three sections:

Section A: Socio- demographic information

Section B: Childcare practices within the preschools

Section C: knowledge on vaccine preventable diseases

Specific details were explored under five major domains of childcare that have direct link with VPDs patho-physiological processes and significantly contribute to the wellbeing of the children: - (i) Immunization practice, (ii) toileting (iii)feeding and food preservation, (iv)environmental sanitation, (v) early detection of symptoms and disease preventive measures. The five sub-sections of knowledge of VPDs included' causes of VPDs, transmission routes, predisposing factors, common symptoms and treatment options (*appendix ix, x - questionnaires).*

3.9 Pre-test and Validity and Reliability

The questionnaire was reviewed severally by my supervisor and appraised by consultants in the Institute of Child Health, Medical and Biostatisticians and Community Medicine Departments, University College Hospital, Ibadan and the Childcare unit of the Women Affairs Commission, State Ministry of Health. The latter (the regulatory body for preschools) provided information on daycares and its monitoring activities in Ibadan. Please see (appendix v) for the guidelines on how to set up a daycare in Ibadan. Pretest was done on thirty preschools caregivers from preschools in Old Bodija. The selected schools for the pretest were excluded from the main study population.

Information were obtained on the nature of preschools in Ibadan, operational definitions of some terms, local and/or technical names words like vaccines and VPDs within Ibadan Translations of technical terms on the questionnaire for example the different vaccines were sort from community perspective. Questionnaire was translated to the local dialect - Yoruba and back to English to correct any form of ambiguity in the questionnaire and on the field. Corrections of the questionnaire were effected based on comments/ information harnessed from these sources to improve on the content and construct validity. Some questions were repeated and reworded such as questions 14a, 14b, 36a and 61 to ensure in-built reliability. See (*appendix ix, x - questionnaires).*

3.10 Data management and analysis

The data collected was entered, cleaned and analysed using the software – Statistical Package for Social Sciences (SPSS Version 16) And EPI Info. Frequencies and proportions, means and appropriate tables and diagrams were used to summarize the data. Childcare variables were reported as univariate items. Each item in a multiple responses format was analyzed .as single variable. Bivariate analysis (chi- square test) of selected variables and the key variables was computed at a significant level of 0.05.

VPDs Knowledge assessment - Responses were in *'Yes'*, don't know and *'No'* format. Correct responses were assigned 1mark. The options 'wrong' and *'don't know'* were not allotted marks. Six VPDs- Measles, Tuberculosis, Polio, Tetanus, Diphtheria, Pertusis were studied. For each of the VPDs, five questions addressed (i) knowledge of the causes of VPDs and added up to **30 points**; (ii) knowledge of transmission routes was **4 points** (iii) five questions each on predisposing factors and (iv) treatment options in the management of VPDs. These added up to **60points**. Composite knowledge score was computed by adding all correct responses to get a maximum obtainable knowledge score of **94points**. Questions on knowledge of symptoms of VPDs were open ended questions and reported as proportions. The mean score of 47.2 ± 13.6 formed the basis for categorizing knowledge as good, when obtained scores are greater than or equals to the mean score and poor if less than the mean score.

Childcare practices' assessment - using a 3 point likert scale, respondents were to choose from the options 'always', 'sometimes' or 'never'. Marks were ascribed as 2 points for 'always', 1 point for 'sometimes' and zero for 'never'. A few peculiar questions such as those of 14a, 14b, 36 and 37 were alloted 1 point for correct responses.

Questions on childcare addressed five domains that are linked with VPDs transmission processes. Total practice score was 80 points. (i) Immunization practices – ***14 points***, (ii) handwashing-***12 points***, (iii) feeding practices -***16 points***, (iv) nutrition – ***27 points***, (v) early detection of symptoms and disease prevention measures -***11 points*** however

(vi) environmental sanitation variables were reported as proportions. Maximum obtainable score for practice was 80 points. Mean childcare practice score was 23.3 ± 4.6.bt

Outcome variables

The two dependent variables included responses that reflect knowledge of six VPDs and childcare disease prevention practices. All the variables found to be significant on the bi-variate analysis at ten percent were fitted into the logistic model. Outcome variables were dichotomized for the purpose of logistic regression modeling respondent's probability of holding good or poor knowledge of VPDs and good versus poor childcare practice. Unadjusted prevalence estimates for each outcome variable are in chapter four.

3.11 Ethical considerations

The study protocol was approved by Oyo State Ethics Review Committee (*appendix viii)*. Informed and written consents were obtained from all preschools administrative heads and individual caregivers before commencement of interview and administration of questionnaires, the concept of the research was carefully explained to the participants to ascertain that the respondents thoroughly understood the aim of the study before giving their responses. They were reassured that it was not going to be used as evidences against them. Information provided was kept strictly confidential from point of collection to analysis. Participation was voluntary and each respondent received a writing pen after questionnaire administration. The study will be beneficial to the participants in the long run when the research findings are disseminated to caregivers as feedback. It can also be presented to Oyo State Government policy makers in form a seminar to guide review of policy documents/ curriculum on school health programmes.

The reports and inherent educative benefit of this research should impact on the children's caregivers, guide better policy development for the operations of preschools (registration process, prerequisites for setting up preschools, the recruiting requirements for caregivers) and ultimately promote the childcare practices. It will create the channel for involving the caregivers in sharing responsibility and playing active roles in WHO aims toward the achievement of the MDG 4 strategy. This is achievable by the maximization of opportunities provided by the roles of the caregivers.

CHAPTER FOUR

4.1 Socio-demographic characteristics of the respondents

The socio-demographic characteristics of the respondents are presented in Figure 4.1 and Table 4.2 below. The mean age of the respondents was 33.7years ± (9.5). The highest proportion 300 (37.5%) of the respondents were between the age of 21 to 30 years. The least reported age was 16 years.

Majority, 776(97.1%) of the participants were females. Christianity (91.1%) was the religion practiced by majority of the respondents. Most, 559 (70.0%) were married, while 238 (29.8%) were single. Yoruba (81.2%) ranked first as the most dominant ethnic group.

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Table 4.1: Socio-demographic characteristics of the participants

Demographic characteristics	Frequency (N=799)	Percentage (%)
Age: (Years)		
20 years and below	53	6.6
21-29	246	30.8
30-39	287	35.9
40-49	157	18.9
50 and above	62	7.8
Sex		
Males	23	2.9
Females	776	97.1
Marital Status		
Single	238	29.8
Married	559	70.0
Widowed	2	0.3
Religion		
Christianity	728	91.1
Islam	67	8.4
Others	4	0.5
Tribe		
Yoruba	649	81.2
Igbo	83	10.4
Hausa	20	2.5
Edo	47	5.9
No of Children Alive		
<5	258	32.4
> 5	343	42.9
No Children	198	24.7
Total	**799**	**100.0**

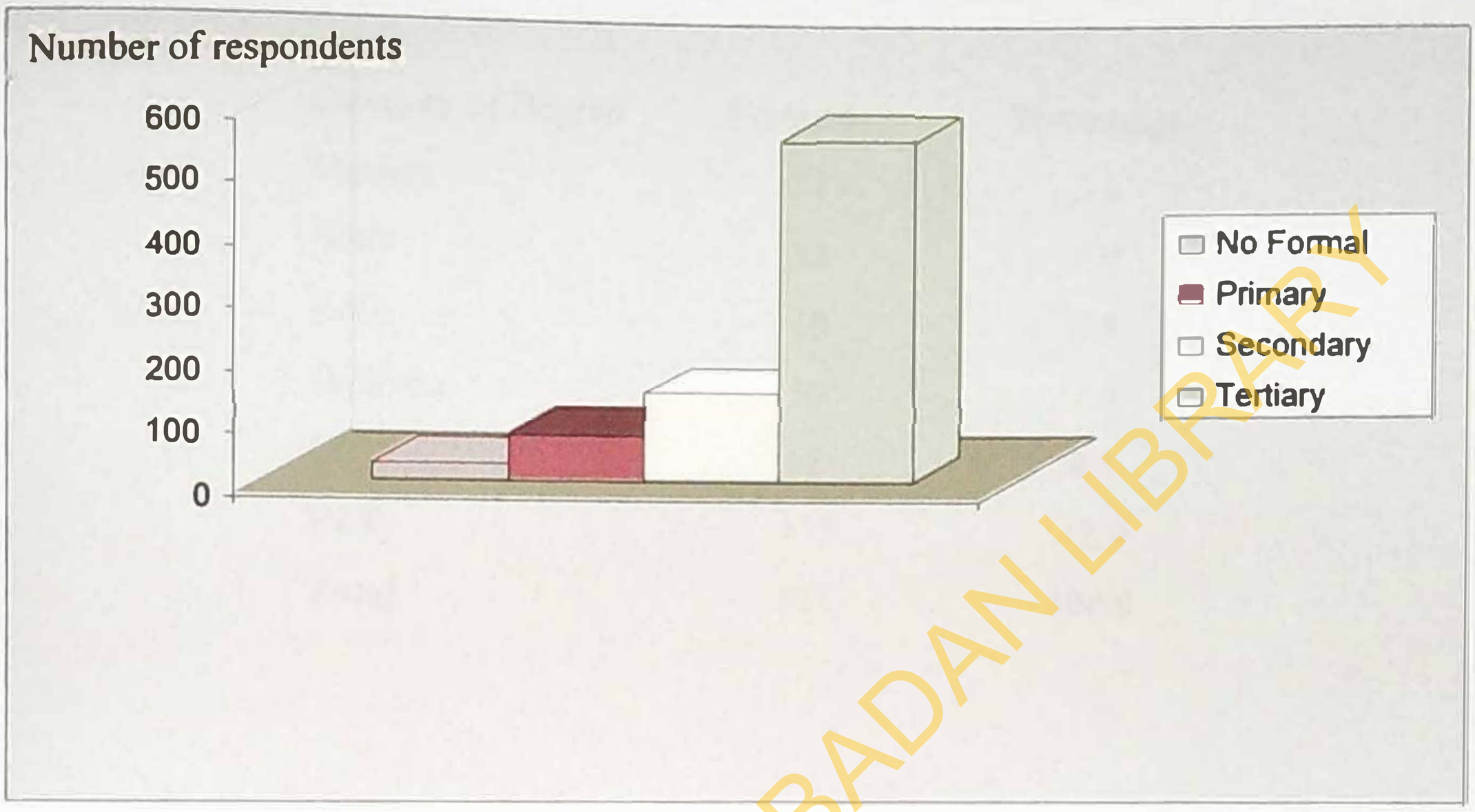

Figure 4.1 : Educational Levels of Respondents

Figure 4.1 depicts the respondents' educational status of respondents of which the highest proportion 552 (69.1%) of the respondents had post secondary education followed by those who had secondary school level of education (17.9%).

Post secondary education categorized by educational levels is shown in table 4.2. The greatest proportion of National College of Education (N.C.E) degree holders accounted for the highest number of caregivers 335 (41.9%).

Table 4.2: Frequency Distribution of Respondents with tertiary Education

Category of Degree	Frequency	Percentage
Masters	21	2.6
HND	32	4.0
B.S.c	39	4.9
Diploma	56	7.0
OND	68	8.5
NCE	335	41.9
Total	**551**	**100.0**

4.2 Occupational Profile of Respondents

The respondents, either solely teachers or caregivers or a combination of both, had an average working experience of 2 years with an average input of 8 hours of service each day.

Table 4.3: Occupational Profile of Respondents

Variable	Frequency N=799	Percentage (%)
Average duration of service		
≤ 8hrs	561	70.2
>8hrs	23	29.8
Job description of care-givers		
Teacher	503	63.0
Child caregiver	219	27.4
Both	62	7.8
Others(Specify)	15	1.9
Years as childcare worker		
< 1year	82	10.3
1 - 9years	566	71.1
10- 19years	126	15.8
20-29years	24	3.0
≥ 30years	1	0.1

4.2 Occupational Profile of Respondents

As depicted in figure 4.2 below, majority of the respondents 594 (74.3%) do not have any formal training on childcare before commencing work at these facilities. Predominant source of training was the College of Education 64(8%).Other forms of training, done on an average of twice per year, were mostly internally organized by the school administration in only 71(8.9%).

About 81 (10.1%) of the respondents had prior affiliation with a health care facility. HIV/AIDS test was the commonest required pre-employment medical check done and only 99 (12.4%) of the respondents mentioned they were screened. Post- employment, 701 (87.7%) of the respondents do not have routine medical check.

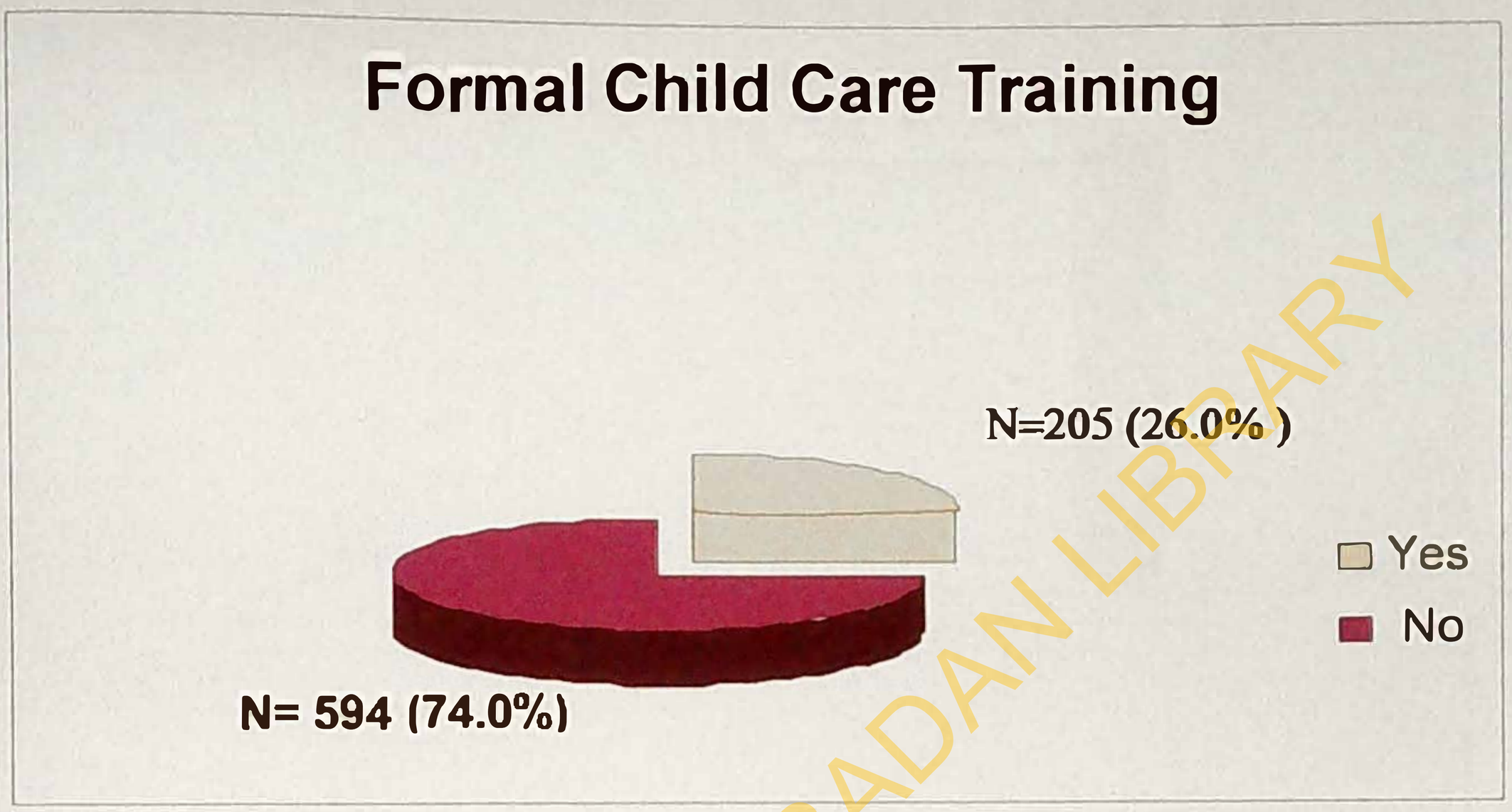

Figure 4.2 Pre-employment Formal Training

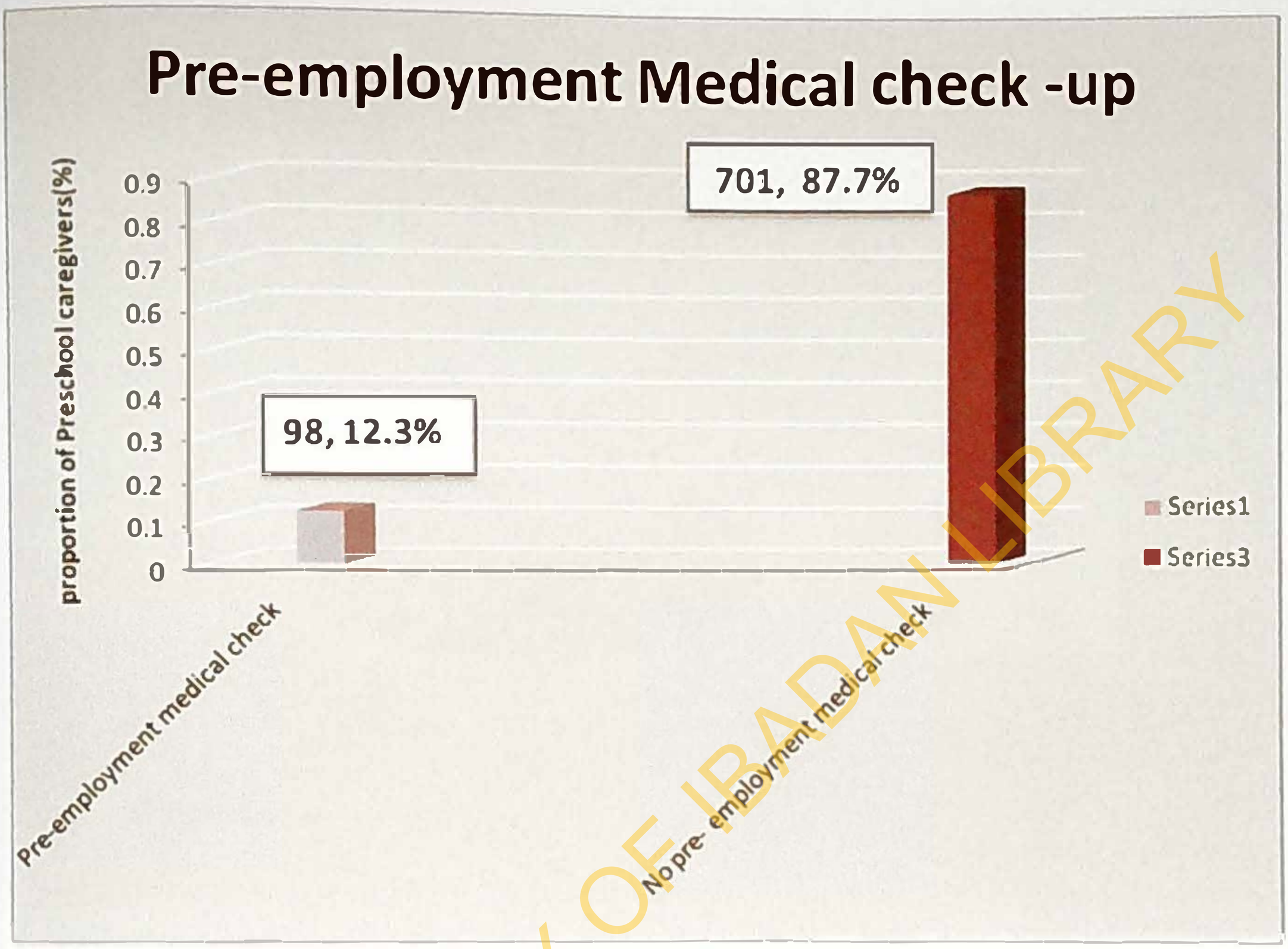

Figure 4.3: Pre-employment Medical check-up

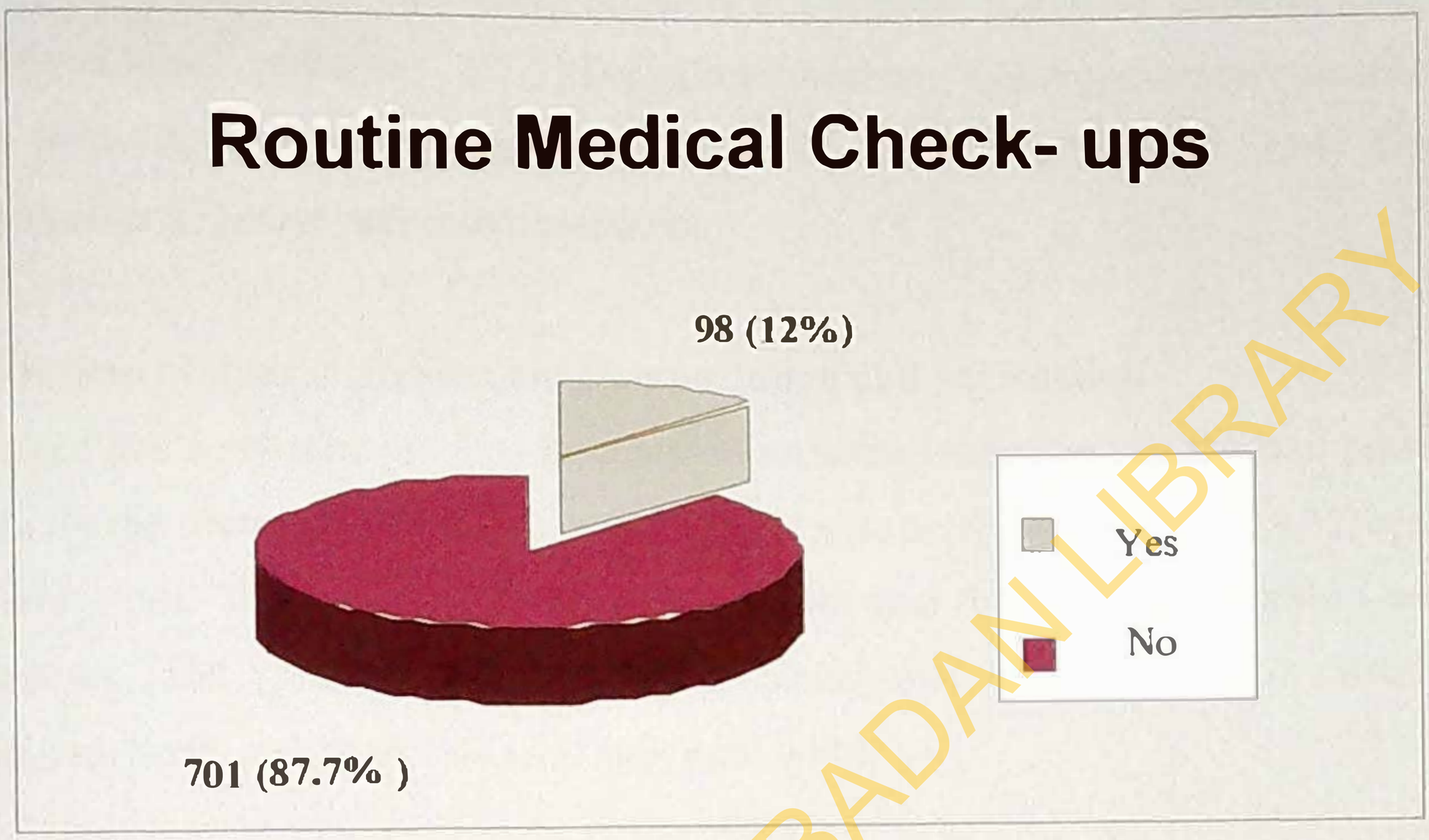

Figure 4.4: Routine Medical Check-ups Done for Staffs

4.3 Source of information on Disease prevention practices and VPDs

Mass media - television 567(71.0%) and radio 557 (69.7%) contributed significantly as the major source of information on knowledge of vaccines and vaccine preventable diseases.

4.4 Childcare Disease Prevention Practices of Care givers

Results were presented on five major domains of childcare that have direct link with the patho-physiological processes of VPDs. They include:- (i)Immunization practice, (ii) toileting (iii)feeding and food preservation, (iv)environmental sanitation, (v) early detection of symptoms and disease preventive measures.

4.4.1 Practices of disease prevention: Immunization and vaccination

Six hundred and forty nine (81.2%) respondents reported vaccination as the best preventive approach for the diseases, 139 (17.4%) mix vaccines with local herbs and 11(1.4 %) opted for local herbs alone. When the respondents were asked what they actually practiced on their own children, 564 (77.6%) selected 'vaccine alone' option; 129, (17.7%) mixed both vaccines with herbs and 34 (4.7%) used only local herbs.

Table 4.4 Preventive Practices of Caregivers

Best Preventive Approach to preventing VPDs	Vaccines only	local herbs only	mixing both	Total
Opinion by respondents	649(81.2%)	11 (1.4%)	139(17.4%)	799
Actual Practice of respondents	564(70.6%)	34(4.3%)	129(16.1%)	799

4.4.2 Immunization practice in schools

Immunization practice in schools was determined by affirmative responses 'always' and 'sometimes'. About 605 (75.7%) of respondents mentioned that they 'communicate the importance of immunizations to parents'. There was a smaller proportion of 414 (51.8%) reported to 'check children's' immunization status'. Majority of the respondents 586 (73.3%) mentioned that they always 'support/allow national immunization exercises in the preschools. However, during the immunization exercises, slightly higher than a third of the respondents 301 (37.7%) allow children with cold and diarrhea to be vaccinated.

4.4.3 Hand washing practices

Based on self report, over seventy percent always wash their hands prior to commencing work in the morning (78.7%), feeding the children (79.6%)), after using the toilet (95.6%) and changing each child's soiled pampers (82.1%).

4.4.4 Nutrition Patterns of children in Preschools

About 456 (56.3%) respondents reported that meals for the children were mainly brought in from their homes. A small proportion 153 (19.1%) reported formular feeds was the most common feed given to children between the ages of one to six months. Other meals identified include pap 124 (15.5%) and indomie noodles 125(15.6%) *(see table 4.5 below)*.

Only 59 of 201 respondents (7.4%) who attended to daycare age groups reported to warm the expressed breast milk just before feeding the children. Children aged 6 months and up till 5 years ate mainly on staple food- rice, indomie noodles, amala, pap, beans, yam, biscuit and bread.

Table 4.6 Nutrition Patterns within the age group (1-6months)

Food type	Frequency	Percentages (%)
Formular feed	153	33.6
Exp. Breast milk	144	3.2
Plain pap	119	26.1
Caregivers breastfeeding children	40	8.8
	N= 456	

(Multiple responses applicable)

4.4.5. Feeding practices of caregivers at the preschools centers

Table 4.5 Highlights the feeding Practices in the preschools

Feeding practices	Frequency of practice N=799	Percentage (%)
Leave to cool	656	82.1
Fan to cool	152	19.0
Tasting food prior to feeding child	133	16.6
Put hot food pack in a bowl of water	124	15.5
Blow the food with mouth	79	9.9
Chew food to soften it before feeding	44	5.5
Sharing of cups	35	4.4
Force feed	109	13.6
Food Preservation Practices		
Kept in warmers	90	49.5
Refrigerated	35	19.3
Frozen	23	12.6
Kept till feeding time	34	18.7
Totals	**182**	

(Note:Multiple responses applicable)

4.4.6 Cleansing agent

Water mixed with Omo detergent concurrent use of either izal or dettol as disinfectants are the commonest cleansing agent used in majority of the facilities as reported by 713(89.2%). On the average, according to the respondents, classroom cleaning is done on twice per day basis.

4.4.7 Detection of contagious VPDs in event of sickness of the children

Table 4.7 below shows respondents' views on most contagious VPD. Measles was considered by 687 (86 %) as the most infectious of the VPDs, followed by tuberculosis (77.6%) and chicken pox (77.0%). Few of the respondents reported malaria 152(19%) as being infectious.

Table 4.7: Frequency distributions of VPDs which respondents considered most contagious.

VPDs	Frequency N=799	Percentage (%)
Measles	687	86.0
TB	620	77.6
Chicken Pox	615	77.0
Diphtheria	595	74.5
Conjunctivitis	594	74.7
Pertusis	568	71.1
Diarrhoea	358	44.8
Polio	286	35.5
Tetanus	253	32.3
Malaria	152	19.0

(*Note: multiple responses applicable*)

4.5 Caregivers' Childcare practice score

Figure 4.5 depicts assessment of practices based on scoring system previously described in the methodology section. Mean childcare practice score was 24 ± 4.5. Slightly more than half of the respondents, 453(56.7%) had poor practices in the facilities.

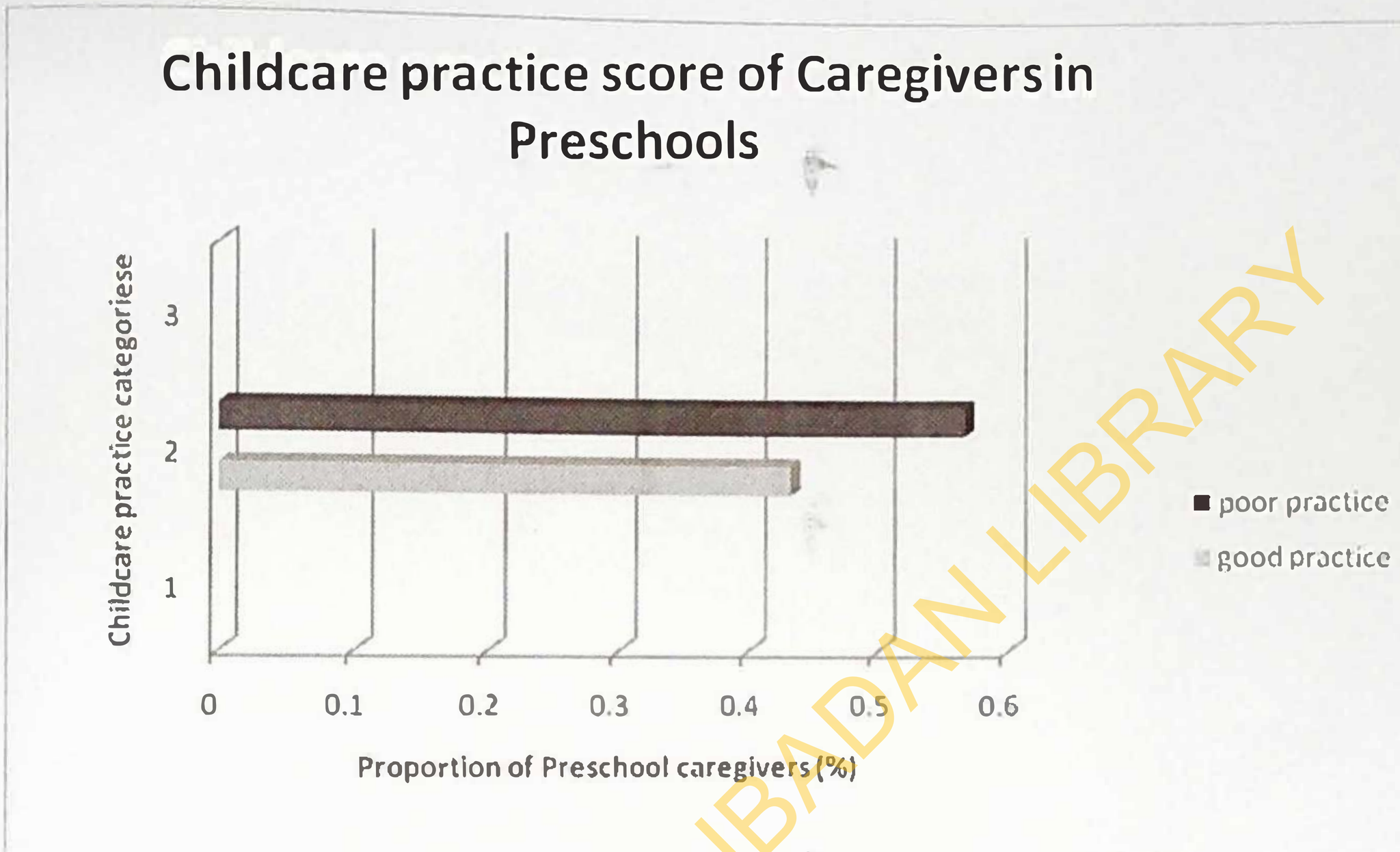

Figure 4.51 Childcare Practices among caregivers in preschools

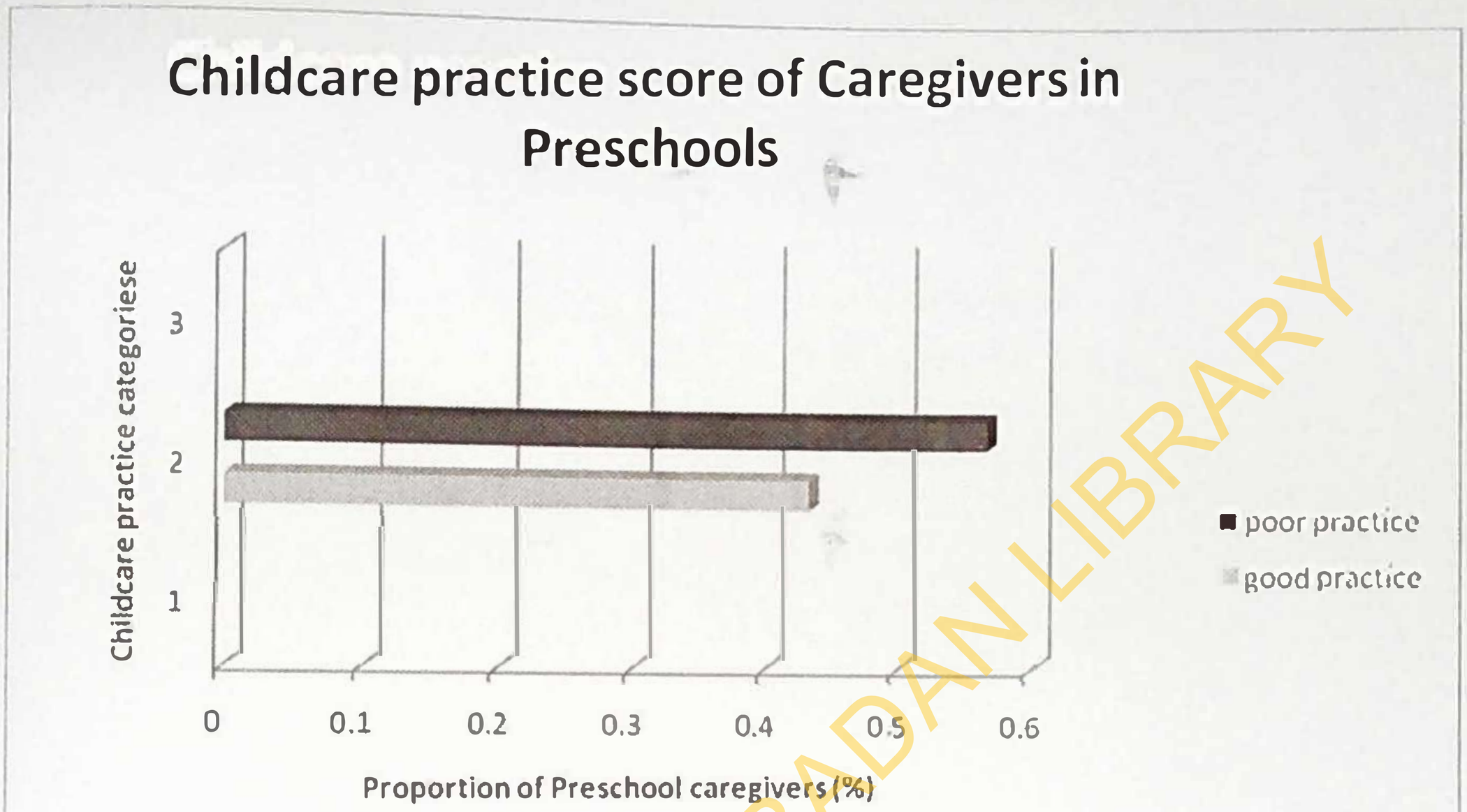

Figure 4.51 Childcare Practices among caregivers in preschools

4.6 Preschool Caregivers' knowledge of Vaccine Preventable Diseases

Figure 4.6 depicts the respondent's knowledge on vaccine preventable diseases. Majority, 551(69.0%) had a good knowledge of vaccine preventable disease.

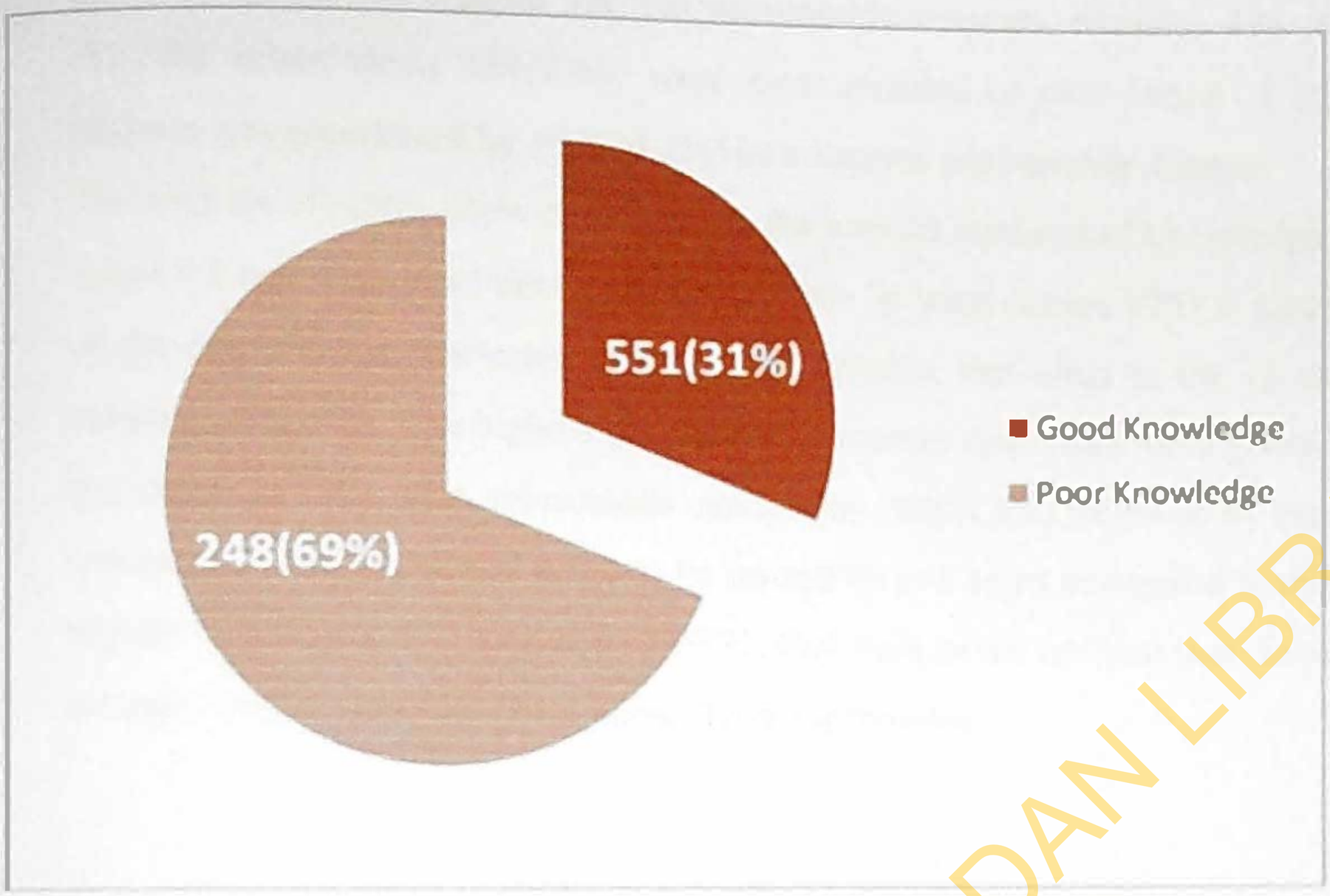

Figure 4.6: Respondents' Composite Knowledge of VPDs

4.7 Specific knowledge on VPDs by caregivers

This study reveals that 118 (14.8%) of the respondents were able to say how vaccines work in the body to protect against vaccine preventable diseases. Measles 496 (62.1%), polio 489 (61.2%), tuberculosis 184(23%) were most recalled or ever heard of by the respondents. Malaria was mentioned by 193(24.2%) as a vaccine preventable disease.

The next set of tables show responses on the various domains of knowledge of VPDs.

Table 4.8 below showed the respondents' view on what causes VPD's. Less than fifty percent of the respondents, correctly, were of the opinion that virus is the as causative agent for measles and polio. The highest proportion of correct responses were given by 361(45.2%) to the 'cause of TB'. Also, tuberculosis reported by 252(31.5%) followed by measles 242 (30.3%) respondents were opinioned more to be caused by evil spirit compared to the other VPDs. The highest proportion of respondents 259(32.4%) were of the opinion that 'exposure to too much sunlight 'was a cause of VPDs particularly for measles.

Table 4.8: Respondent's Knowledge of causes of VPDs

	Vaccines Preventable Diseases											
	Measles N=799		TB N=799		Polio N=799		Tetanus N=799		Pertusis N=799		Diphtheria N=799	
Causes	Yes (%)	No(%)	Yes(%)	No (%)	Yes (%)	No(%)	Yes (%)	No(%)	Yes (%)	No(%	Yes (%)	No (%)
Punishment for parents sins	103(12.9)	6(87.1)	104(13.0)	695(87.0)	95(11.9)	704(88.1)	133 (14.1)	666(83.4)	93(11.6)	706(88.4)	103(12.9)	696(87.1)
Infective -Virus	360(45.1)	439(54.9)	361(45.2)	438(54.8)	243(30.4)	556(69.6)	299(37.4)	500(62.6)	272(34.0)	527(66.0)	261(32.7)	538(67.3)
Evil spirits & witches	242(30.3)	557(69.7)	252(31.5)	547(68.5)	231(28.9)	568(71.1)	235(29.4)	564(70.6)	232(29.0)	567(71.0)	233(29.3)	566(70.8)
Infective – Bacteria	284(35.5)	515(64.5)	295(36.9)	504(63.1)	241(30.2)	558(69.8)	295(36.9)	504(63.1)	264(33.0)	535(67.0)	247(30.9)	552(69.1)
Exposure to too much sunlight	259(32.4)	540(67.6)	78(9.8)	721(90.2)	181(22.7)	618(77.3)	49(6.1)	750(93.9)	53 (6.6)	746(93.4)	45 (5.6)	754(94.4)

Knowledge of predisposing Factors to VPDs

The respondents were also asked of conditions that encouraged VPD infections, 80.2% and 76.6% considered dead, deep and dirty wounds as predisposing factors for tetanus infections and overcrowding for measles respectively (Table 4.9).

Table 4.9: Respondent's Knowledge of what predisposes to VPDs

Predisposing Factors	True n (%)	False n(%)	Don't know n(%)	Total n(%)
Dead, deep and dirty wounds are good conditions for tetanus	640 (80.2)	73(9.1)	85 (10.7)	798
HIV/AIDS doesn't increase risk of TB transmission	175 (21.9)	398(49.8)	225 (28.3)	793
The risk of measles increases where children are overcrowded	612 (76.6)	83(10.4)	104 (13.0)	799
Cross ventilation promotes spread of respiratory infections	219 (27.4)	462(57.8)	118 (14.8)	871

Knowledge of Treatment options of VPDs

Table 4.10 shows the respondents' knowledge on management options in treating VPDs. A large percentage of the respondents were of the opinion that local remedies like bitter leaf extract 418(52.3%), palmwine and palm-oil 564 (70.6%) were invaluable as treatment options particularly for measles. The use of antibiotics was mentioned by greater than two third of the respondents in the treatment of all the VPDs (Table 4.10).

Table 4.10: Respondent's Knowledge of treatment options in VPDs

Treatment Options	Measles N =799		TB N=799		Polio N=799		Tetanus N=799		Pertusis N=799		Diphtheria N=799	
	Yes n(%)	No n(%)	Yes n(%)	No n(%)	Yes n(%)	No n(%)	Yes n(%)	No n(%)	Yes n(%)	No n(%)	Yes n(%)	No n(%)
Use of bitterleaf	418(52.3)	381(47.7)	87(10.9)	712(89.1)	69(8.6)	730(91.4)	64 (8.0)	735(92.0)	57 (7.1)	742(92.9)	53(6.6)	746(93.4
Antibiotics	619(77.5)	180(22.5)	532(66.6)	267(33.4)	478(59.8)	321(40.2)	542(67.8)	257(32.2)	525(65.7)	274(34.3)	539(67.5)	206(25.8
Palmwine & P.Oil	564(70.6)	235(29.4)	102(12.8)	697(87.2)	84(10.5)	715(89.5)	69 (8.6)	730(91.4)	137(17.1)	662(82.9)	131(16.4)	668(83.6
Agbo	370(46.3)	429(53.7)	253(31.7)	546(68.3)	172(21.5)	627(78.5)	179(22.4)	620(77.6)	212(26.5)	587(73.5)	204(25.5)	595(74.5
Antipyretics	159(19.9)	640(80.1)	97(12.1)	702(87.9)	72(9.0)	727(91.0)	86(10.8)	713(89.2)	79 (9.9)	720(90.1)	72 (9.0)	727(91.0)

4.8 Associations Between Selected Variables and Knowledge of VPDs

Results show that the training of the respondents, p-value - (0.03), level of education - (0.03) and respondents that has worked in other health facilities p value < (0.05) contributed significantly to the knowledge of VPDs. Age grouping, job specifications and concurrent engagement with other jobs did not contribute to their knowledge of VPDs (Table 4.11).

Some factors found to influence practices of the caregivers include formal childcare training of respondents, p< (0.05), past work experience in a health facility(0.01) pre-employment medical checkup< (0.05), job specification (0.018)and those that have worked in other health facilities, while number of years as a child care worker, and whether they had other jobs did not influence their practice. The table below depicts the association between knowledge of VPD's and some selected variables. See table 4.11 for details.

4.8 Associations Between Selected Variables and Knowledge of VPDs

Results show that the training of the respondents, p-value - (0.03), level of education - (0.03) and respondents that has worked in other health facilities p value < (0.05) contributed significantly to the knowledge of VPDs. Age grouping, job specifications and concurrent engagement with other jobs did not contribute to their knowledge of VPDs (Table 4.11).

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Table 4.11: Associations between socio-demographic variables and knowledge of VPDs

Variable	Knowledge				
	Good	Poor	Total	Chi sqaure	P value
Age					
Less than 20	35 (66.0%)	18(34.0%)	53(100%)	4.947	0.29
20-29	161 (65.4%)	85 (34.6%)	246(100%)		
30-39	209 (72.8%)	78 (27.2%)	287(100.0%)		
40 -49	107(70.9%)	44(29.1%)	151(100.0%)		
> 50	39(62.9%)	23(37.1%)	62(100.0%)		
Sex					
Males	18(78.3%)	5(21.7%)	23(100.0%)	0.957	0.23
Females	533(68.7%)	243(31.3%)	776(100.0%)		
Level of education					
None	17(60.7%)	11(39.3%)	28(100.0%)	8.725	0.03
Primary	43(56.6%)	33(43.4%)	76(100.0%)		
Secondary	107(74.8%)	36(25.2%)	143(100.0%)		
Tertiary	384(69.6%)	168(30.4%)	552(100.0%)		
Children < 5yrs					
Yes	184(70.8%)	76(29.2%)	260(100.0%)	0.589	0.25
No	367(68.1%)	172(31.9%)	539(100.0%)		
Children ≥ 5yrs				0.154	
Yes	234(68.2%)	109(31.8%)	343(100.0%)		0.70
No	317(69.5%)	139(30.5%)	456(100.0%)		

*Significant level at 5%.

Table 4.12: Associations between occupational profile variables and Knowledge of VPDs

Variable	Knowledge				
	Good	Poor	Total (%)	Chi sqaure	P value
Years of work					
< 1yr	53(64.6%)	29(35.4%)	82(100.0%)	8.954	0.06
1 to 9 yrs	405(71.8%)	159(28.2%)	564(100.0%)		
10 to19 yrs	76(60.3%)	50(39.7%)	126(100.0%)		
20yrs&above	15(60.0%)	10(41.7%)	25(100.0%)		
Any Formal Training					
Yes	154(75.1%)	51(24.9%)	205(100.0%)	4.890	0.03
No	397(66.8%)	197(33.2%)	594(100.0%)		
Have another Job					
Yes	125(64.8%)	68(35.2%)	193(100.0%)	2.052	0.15
No	425(70.2%)	180(29.8%)	605(100.0%)		
Current Job Specification					
Teacher	356(70.8%)	147(29.2%)	503(100.0%)	3.150	0.37
Child-Caregiver	146(66.7%)	73(33.3%)	219(100.0%)		
Both	38(61.3%)	24(38.7%)	62(100.0%)		
Others	11(73.3%)	4(26.7%)	15(100.0%)		

*Significant level at 5%.

Table 4.13: Associations between socio-demographic variables and Childcare practices of caregivers

Variable	Childcare Practice				
	Poor	Good	Total (%)	Chi sqaure	P value
Age					
Less than 20	29 (54.7%)	24(45.3%)	53(100%)	6.263	0.18
20-29	154 (62.6%)	92 (37.4%)	246(100%)		
30-39	160 (55.7%)	127 (44.3%)	287(100.0%)		
40 -49	76(50.3%)	75(49.7%)	151(100.0%)		
> 50	34(54.8%)	28(45.2%)	62(100.0%)		
Sex					
Males	13(56.5%)	10(43.5%)	23(100.0%)	0.000	0.99
Females	440(56.7%)	336(43.3%)	776(100.0%)		
Level of education					
None	18(64.3%)	10(35.7%)	28(100.0%)	5.457	0.14
Primary	44(57.9%)	32(42.1%)	76(100.0%)		
Secondary	69(48.3%)	74(51.7%)	143(100.0%)		
Tertiary	322(58.3%)	230(41.7%)	552(100.0%)		
Has children less than 5yrs					
Yes	138(53.1%)	122(46.9%)	260(100.0%)	2.056	0.15
No	315(58.4%)	224(41.6%)	539(100.0%)		
Has children above 5yrs					
Yes	191(55.7%)	152(44.3%)	343(100.0%)	0.250	0.62
No	262(57.5%)	194(42.5%)	456(100.0%)		

*Significant level at 5%.

Table 4.13: Associations between socio-demographic variables and Childcare practices of caregivers

Variable	Childcare Practice				
	Poor	Good	Total (%)	Chi sqaure	P value
Age					
Less than 20	29 (54.7%)	24(45.3%)	53(100%)	6.263	0.18
20-29	154 (62.6%)	92 (37.4%)	246(100%)		
30-39	160 (55.7%)	127 (44.3%)	287(100.0%)		
40 -49	76(50.3%)	75(49.7%)	151(100.0%)		
> 50	34(54.8%)	28(45.2%)	62(100.0%)		
Sex					
Males	13(56.5%)	10(43.5%)	23(100.0%)	0.000	0.99
Females	440(56.7%)	336(43.3%)	776(100.0%)		
Level of education					
None	18(64.3%)	10(35.7%)	28(100.0%)	5.457	0.14
Primary	44(57.9%)	32(42.1%)	76(100.0%)		
Secondary	69(48.3%)	74(51.7%)	143(100.0%)		
Tertiary	322(58.3%)	230(41.7%)	552(100.0%)		
Has children less than 5yrs					
Yes	138(53.1%)	122(46.9%)	260(100.0%)	2.056	0.15
No	315(58.4%)	224(41.6%)	539(100.0%)		
Has children above 5yrs					
Yes	191(55.7%)	152(44.3%)	343(100.0%)	0.250	0.62
No	262(57.5%)	194(42.5%)	456(100.0%)		

*Significant level at 5%.

Table 4.14: : Associations between occupational profile variables and Practice of caregivers

Variable	Childcare Practice				
	Poor	Good	Total	Chi sqaure	P value
Years as a Care Worker					
< 1yr	53(64.6%)	29(35.4%)	82(100.0%)	6.606	0.16
1 to 9 yrs	322(57.1%)	242(42.9%)	564(100.0%)		
10 to19 yrs	66(52.4%)	60(47.6%)	126(100.0%)		
20yrs & above	10(41.7%)	15(60.0%)	24(100.0%)		
Any Formal Training	97(47.3%)	108(52.7%)	205(100.0%)	9.879	0.00
Yes	356(59.9%)	238(40.1%)	594(100.0%)		
No					
Current Job Specification					
Teacher	305(60.6%)	198(39.4%)	503(100.0%)	10.082	0.02
Child Caregiver	114(52.1%)	105(47.9%)	219(100.0%)		
Both	27(43.5%)	35(56.5%)	62(100.0%)		
Others	7(46.7%)	8(53.3%)	15(100.0%)		

*Significant level at 5%.

4.9 Association between Knowledge of VPDs and childcare practices

Results showed that there was a significant association between knowledge of vaccine preventable diseases and childcare practices amongst care givers (p=0.004).

Table 4.15 Relationship between Knowledge of VPD'S and Practices of care givers

Knowledge	Practice			Chi-sqaure	P value
	Poor	Good	Total		
Good	295	256	551		
	53.5%	46.5%	100.0%	7.206	0.004
Poor	158	90	248		
	63.7%	36.3%	100.0%		
Total	453	346	799		
	100.0%	100.0%	100.0%		

*Significant level at 5%.

4.9 Determinants of good knowledge of VPDs: socio-demographic and occupational variables

Those who have had a form of formal training (OR; 95%CI = 1.20 - 2.34) and those with higher caregiver education level (tertiary education) were about 2 and 1.3 times more likely to have good knowledge of VPDs at a significant level of less than 0.05 (p= 0.00) and (0.03) respectively compared to those who had no prior employment training and other lower educational cadres .

Table 4.16 Logistic Regression: Predictors of good VPDs Knowledge

Variable	Odds ratio(OR)	95% CI OR	P value	Chi square (p value)
Any Formal Training				
Yes	1.68	1.20-2.34	0.002	0.0
No (rf)	1			
Worked in a Health Facility				
Yes	0.50	0.31-0.82	0.005	0.01
No (rf)	1			
Level of education				
None (rf)	0	0.31-1.46	0.320	
Primary	0.68	0.30-0.83	0.007	0.03
Secondary	0.50	0.92-1.96	0.127	
Tertiary	1.34			

*Rf- Reference category

4.10 Determinants of good Childcare Practices on occupational profile variables

Of the four variables found to be significant in the bivariate analysis that were fitted into the logistic regression models, 'Childcare training' ; (95%CI OR =1.05-2.05) and 'previous affiliation with healthcare facilities' 95% CI OR (1.11- 2.29) were found to be predictors. Those respondents with these attributes were 1.25times and 1.47 times more likely to positively influence childcare practices respectively.

Table 4.17. Logistic Regression: Predictors of good Childcare Practices

Variable	Odds ratio(OR)	95% CI OR	P value	Chi-square p value
Medical Checkup done on Staff				
Yes	1.25	0.81-1.95	0.304	0.000
No (rf)	1			
Any Formal Training*				
Yes	1.47	1.05-2.05	0.024	0.001
No (rf)	1			
Worked in a Health Facility*				
Yes	1.79	1.11-2.29	0.016	0.005
No (rf)	1			
Current Job Specification				
Teacher	0.54	0.31-0.93	0.025	0.18
Child Caregiver	0.73	0.41-0.31	0.295	
Both	0.98	0.31-1.31	0.969	
Others (rf)	1			

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Variable	Odds ratio(OR)	95% CI OR	P value	Chi-square p value
Medical Checkup done on Staff				
Yes	1.25	0.81-1.95	0.304	0.000
No (rf)	1			
Any Formal Training*				
Yes	1.47	1.05-2.05	0.024	0.001
No (rf)	1			
Worked in a Health Facility*				
Yes	1.79	1.11-2.29	0.016	0.005
No (rf)	1			
Current Job Specification				
Teacher	0.54	0.31-0.93	0.025	0.18
Child Caregiver	0.73	0.41-0.31	0.295	
Both	0.98	0.31-1.31	0.969	
Others (rf)	1			

CHAPTER FIVE

DISCUSSION

5.1 Socio-demographic Characteristics

The response rate was 100%. Analyses were done on seven hundred and ninety nine responses. Only two high profile private schools refused interview on the account that they were not interested.

The concept of caregiving regardless of the different types of caregiving (primary or secondary or the age of the recipients involved), has particularly wholesome health implications for the society. Daycare services when good can complement good parenting and hence the health status of the children.

Historically, care-giving had been predominantly a feminine domain (Akinbanmi, 1998; Decima, 2004). In this study, 97.1% were female similar to findings worldwide. The female workforce in daycares according Canadian survey in 1999 was 95%. In Sweden, (Skolverket 2000), only about 5 per cent of the staff at preschools and leisure-time centres are men. Although female gender has the homemaking advantage, an assumption though globally prevailing even at policy levels is slowly evolving according to a report on 'caring about caregivers'. It argues that the definition of caregivers must be gender neutral and support both women and men in the role of caregiver in order to *focus on what men can (be encouraged to) contribute in the future* (Abrown, 2009). Some researchers in the pursuit to define childcare argued that care by the father on a regular basis should be considered "child care" because that situation differed from one in which the mother had full-time care responsibility, others argued that "child care" should include only care by people other than the parents. Ultimately, the researchers decided to study all forms of childcare provided by someone other than the mother on a regular basis. These arrangements included care from the father or other relative, care from one caregiver (who was not related to the child) in the child's home, small group care in a caregiver's home, and center-based care (Engle, 1990). In the same vein, UNICEF's (2007) had observed that programmes that engage men and the participation of both men and women can help increase a more even division of childcare responsibilities.

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In this study, the youngest caregiver was two years younger than the recommended age limit of 18 years by the US legal units' definition of caregivers and the mean age of participants was found to be (33.65 ± 9.52 years): a figure which reflects that the population type of the job seeker in this sphere are the young. The mean age of primary caregivers (mothers) studied by (Borràs et al. 2009) in Spain (34.08 ± 4.59 years) and by Akinbanmi in Nigeria (31.5years) are close to that of this study. The wide age range of 18-60years in this study population may represent a spectrum of the old trend and the newer relatively younger population of caregivers. The relatively low academic requirements needed for employment in the past and maybe due to familiarity in what appears like an extension of a natural ability to care for children, could explain why this career path is easily considered. A great percentage of the respondents in this study had put in several years of service in the centers, an account that had earlier been documented (Decima, 2004). The numerous numbers of preschools that keep springing up in spite of the industry's oversaturated status may explain the job security that it offers of sorts. Most had worked close to a decade; one caregiver had been in the profession for more than 30 years.

For the level of care required by the parents, the inclination to employ from lower educational status and retirees for the job is gradually becoming obsolete and may even be less cost effective in the long run. The higher proportion of respondents with tertiary educational status corroborates findings from Akinbanmi's study (1998) although the sample size in this study is much larger. This new trend encourages higher educational qualifications compared to previously documented reports of fewer tertiary educated intakes (NCE holders) by proprietors in other to maximize cost margin (Ejieh, 2006). This should pave way for a heightened professional stance. Higher education will make for a better understanding of childhood diseases particularly VPDs from a scientific import and the impact on practice in the preschools as elucidated in this study.

International standards and various generics of policies emphasize the need for the caregivers to have childcare training and license; be able to demonstrate appropriate childcare practices from previous related work experience(s). Majority of the respondents in this study, falling behind standard, do not have formal training in childcare. Previous studies have described caregivers in daycare centers in Nigeria as untrained and inexperienced (Oyemade and Oyewole 1981; Ejieh, 2006).

The *National Policy on Education* is deficient in its prescriptions of detailed curriculum contents and guidelines on provision and management of pre-primary education (Federal Ministry of Education, 1987). The same applies for the guidelines for setting up daycare centers in Ibadan and regulating caregivers' practices. It omits qualification specifications for the caregivers and many other health related issues *See Appendix v.*

Generally, in this study an average of two in- house training is done per year. More than half of the respondents do not have pre-employment medical check-ups and barely 12% have routine medical checks even after commencing work. These positions invariably increase the risk of infections to the children and may jeopardize control efforts on the spread of vaccine preventable diseases. Contrastingly, Australia childcare guideline centrally checks the employment of staff and establishment of daycare centers. It is compulsory for caregivers to have immunization completed before commencing work (Frith et al. 2003).

5.1.2 Preschool Caregivers Knowledge of Vaccine Preventable Diseases

This study found that the knowledge of vaccine preventable diseases amongst preschool caregivers is good in more than fifty percent of the respondents. About the same proportion cited infective agents as the causes of VPDs. Respondents (52.7%) had scores above the mean and were categorized as having satisfactory knowledge of VPDs.

The results of the level of knowledge of vaccine preventable diseases did not differ much from previous studies. Knowledge of VPDs had been positively correlated with improved vaccination practices and management of childhood illnesses (Angelillo, 1999; Lawoyin 2007; Oguonu et al, 2004; Odusanya, 2008).

More distinct findings on VPD knowledge in an Italian survey by Angelillo et al (1999), where14 public kindergartens in Crotone, Calabria, and 10 public kindergartens in Cassino (FR), Lazio were studied showed that slightly above half of the mothers were aware of the *four mandatory* vaccinations for infants (poliomyelitis, tetanus, diphtheria, hepatitis B) with hepatitis B being the most mentioned. In this study, a higher percentage of respondents readily mentioned measles, polio and tuberculosis of all the other vaccine preventable diseases studied. In this study, measles was most recognized and this was corroborated findings in the studies done in Spain (Borràs et al, 2009). In a survey of Northern Nigerian states, it awareness rate was only 1% (Ambe et al, 2001). Despite, that other symptoms such as hair loss and diarrhoea were attributed to measles, generally respondents were familiar with and easily recognized the symptoms and the debilitating effects of VPDs.

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For the symptoms of VPDs, most of the respondents correctly cited fever and rash as principal symptoms of measles. Cough was reported as the predominant symptoms for VPDs in a Nigerian study conducted by Odusanya (2008). Symptom(s) identification were poor in the report from India where such knowledge was very limited save for poliomyelitis (Manjunath and Pareek, 2003).

Majority of the respondents correctly associated tetanus with dirty wounds, overcrowding as a predisposing factor for measles infection and re- emergence of tuberculosis infection with the HIV/AIDS pandemic. There was however misconception with respiratory diseases and the mechanism of its transmission(s). Most of the respondents reported that cross ventilation in classrooms could spread respiratory diseases. The implication being that staying in stuffy enclosed rooms/ classrooms probably overcrowded may be seen as normal.

In exploring the variety of options utilized by the respondents in the treatment of VPDs, more than two third of the respondents had stated use of antibiotics in the management of VPDs. Regard for antipyretic use was rated lower. The belief in non-medical remedies such as the use of palm-oil, palm wine, bitter leaf and herbal concoctions was cited for all the VPDs. However these were more predominant for measles.

Interviewee's account of the causes, transmission routes, symptoms and remedial options in the treatment of vaccine preventable diseases is still limited by misconceptions and myths. The general knowledge of VPDs may be judged as good in this study as with several others studies in the past on VPDs (Angelillo et al, 1999; Oguonu et al, 2004; Ravhengani, 2007; Odusanya, 2008). Media exposure may have modified the high awareness level of VPDs. Notably, Bofaraj (2008) noted in mothers attending the Primary health care clinic (PHCC) in Al-Beida city, Libya for vaccination of their children that knowing little about vaccination, did not necessarily translate into negative attitudes towards it. Similarly in Niger, the vaccination coverage against polio was high more due to the frequent use of "National Polio Immunization Days" despite the low level of awareness by the mothers in that country (Kobayashi, 2003). At the acceptance stage of adoption of an innovation, various factors as basic as, media campaigns, trust (e.g. in health-care providers) and culture may be more influential.

In Nigeria, the major strategy for the prevention and control of VPDs amongst under-fives is anchored mainly on National programme on immunization. Besides wide publicity of these programmes through media; television programmes and radio jiggles, the vaccination

activities that accompany the campaigns in schools may have further exposed the preschool caregivers to a high level of awareness and access to immunization information. The paramedical worker, was found to be the major source of information to the attendants of completely (50.2%) and partially immunized (34.2%) children; community leaders, on other hand were found to be the most important source of information among partially immunized children (Bofarraj,2008).

There are documented evidences of both positive and negative effects of media on immunization information. For example, misconceptions were fuelled by media (internet) questioning the benefits of vaccines particularly measles, mumps and rubella vaccine. The rates for these vaccines dropped low as a consequence. Vaccination rate was 7% in Edmonton, Canada in 2002 from the report of the publication by CCDR-RMTC (Canada Communicable Disease Report- 2006). In Catalonia, Spain, the rate of MMR vaccination was 1.58% (Borràs et al, 2009).

As such, as found in most studies the effect of media as a medium of acquiring immunization information is invaluable. Media is a powerful tool for social change. Positively, McDivitt et al, in a study conducted in the Philippines in 1990, found that mass communication campaign did promote behavioural change. Other authors further suggested that two channels in combination - mass and interpersonal - work better than one alone.

5.1.3 Childcare Practices amongst Preschool

Despite the good knowledge of VPDs in respondents, the persisting low childcare practice against the background of poor reports amongst preschool caregivers particularly studies on daycares (Akinbanmi, 1998; Ejieh, 2006; Oyemade and Oyewole, 1981) underscores the fact that there is still an unwholesome lack of understanding of how knowledge application which is good practice translates to disease prevention.

The evaluation of VPDs prevention practices in this study was basically self reported childcare practices by the caregivers themselves thus the rating for these practices may even be lower. More empirical evidence to confirm the extent of the poor practice may be needed. What may be more important in these preventive strategies is expanding the information dissemination of these preventive measures to all stakeholders and refashioning preventive messages to reflect the link between knowledge of VPDs and disease prevention.

Immunization practice

The traditional EPI vaccines are a highly cost-effective public health intervention. Overall, vaccination has had significant effect on reducing mortality and morbidity from childhood diseases and will be a priority intervention for achieving the child health Millennium Development Goals (Brenzel et al, 2003).

Findings from this study show that there is high acceptance of immunization. This is consistent with previous studies in which mothers surveyed agreed to the importance of immunization as an endeavor worth them taking their children to (Gust et al, 2003 and Gellin et al, 2000).

In this study, respondents were favorably disposed to immunization exercises even in their schools during the National Immunization days and equally communicate the benefits of the exercise to parents. Overall, most of the respondents agreed that vaccines are the best preventive approach to childhood diseases however preschool caregivers may totally hinder the large scale interventions. Due to misconception(s) of contraindications to receiving vaccines, caregivers refuse eligible children from the exercise. For example, more than half of the respondents would erroneously disapprove of immunization i.e. 'not allow children with cold and diarrhea to be vaccinated'. In addition, a child with cough was observed as the main reason for not allowing a child to be immunized.

It is interesting and of concern to note that care-givers opinion of a subject differed from actual practice. The proportion in support of 'the use of only herbs' increased when it came to what they actually do/did for their own children and this proportion dropped for the use of 'only vaccine' to prevent VPDs. A few of the respondent augment local herbs with vaccines. The already established cultural inclinations may explain respondents' modified belief in immunization and it efficacy. Ensuring that the vaccination cards are checked as a prerequisite to admitting the children is not a common practice. And requires being addressed as it can serve as a tool for ensuring optimal immunization status of children.

Other Preschool Caregivers practices

Hand washing and environmental sanitation

A more superior assessment tool for practical processes such as hand-washing technique is observation (Omotade et al, 1995; Akinbanmi 1998; PRISMA, 2004). This examines the appropriateness of the process. Better still is the method of scientifically testing the effectiveness of the hand washing by subjecting swabbed surfaces to bacteriological testing.

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The traditional EPI vaccines are a highly cost-effective public health intervention. Overall, vaccination has had significant effect on reducing mortality and morbidity from childhood diseases and will be a priority intervention for achieving the child health Millennium Development Goals (Brenzel et al, 2003).

Findings from this study show that there is high acceptance of immunization. This is consistent with previous studies in which mothers surveyed agreed to the importance of immunization as an endeavor worth them taking their children to (Gust et al, 2003 and Gellin et al, 2000).

In this study, respondents were favorably disposed to immunization exercises even in their schools during the National Immunization days and equally communicate the benefits of the exercise to parents. Overall, most of the respondents agreed that vaccines are the best preventive approach to childhood diseases however preschool caregivers may totally hinder the large scale interventions. Due to misconception(s) of contraindications to receiving vaccines, caregivers refuse eligible children from the exercise. For example, more than half of the respondents would erroneously disapprove of immunization i.e. 'not allow children with cold and diarrhea to be vaccinated'. In addition, a child with cough was observed as the main reason for not allowing a child to be immunized.

It is interesting and of concern to note that care-givers opinion of a subject differed from actual practice. The proportion in support of 'the use of only herbs' increased when it came to what they actually do/did for their own children and this proportion dropped for the use of 'only vaccine' to prevent VPDs. A few of the respondent augment local herbs with vaccines. The already established cultural inclinations may explain respondents' modified belief in immunization and it efficacy. Ensuring that the vaccination cards are checked as a prerequisite to admitting the children is not a common practice. And requires being addressed as it can serve as a tool for ensuring optimal immunization status of children.

Other Preschool Caregivers practices

Hand washing and environmental sanitation

A more superior assessment tool for practical processes such as hand-washing technique is observation (Omotade et al, 1995; Akinbanmi 1998; PRISMA, 2004). This examines the appropriateness of the process. Better still is the method of scientifically testing the effectiveness of the hand washing by subjecting swabbed surfaces to bacteriological testing.

Due to expectation and social desirability biases, a verbal /self reported rates of greater than seventy percent for all hand washing practices - prior to commencing work in the morning, feeding the children, after using the toilet and changing each child's soiled pampers hence is to be regarded with caution. Disinfectants are used sparsely in the course of daily cleaning of the working surfaces in these facilities. Averagely this is done twice per week.

Nutrition and feeding practice

Practices observed to fall short of international standards in this study include, tasting the food prior to feeding the child, blowing the food with mouth to cool food, chewing food to soften it before feeding and force feeding. A finding of concern is the 5.5% of the respondents who breastfed neonates to pacify them when they are crying regardless of the ethical considerations of the issue and the implication of possible transmission of HIV/AIDs. In the past, wet nursing for motherless babies have been culturally accepted in most settings.

Exclusive breastfeeding as recommended by the WHO is difficult to maintain for working mothers. With the child in daycare centers most mothers invariably initiate complementary feeding before six months. In this study, complementary feeding with formula is the most common feed provided for infants attending daycares. The accounts given by the caregivers of the meals brought to the schools by older children are mainly carbohydrate based foods: - pap 124 (15.5%) and indomie noodles 125(15.6%), no account is given of vitamins; fruits and vegetables. Newer trends of nutritional skewness to high caloric diets are documented. All these serve as risk factors for non- communicable diseases later in adulthoods (WHO, 2007; Reddy et al, 2007). In a more quantitative study in China in 1992, that corroborates this global phenonenom of nutritional inbalance in preschools; the national average prevalence of overweight and obesity for children under 6 years was 3.4 and 2.0%, respectively; micronutrients deficiencies including calcium, zinc, vitamin A, vitamin B1 and B2 was shown to be rather common in the preschool and school children. Current data showed in the country that the growth and development of Chinese children is far from ideal and they are now facing double challenges of malnutrition and the increase in overweight and obesity in children.

The low National breast feeding rate of 13% in 2008 by National Demographic and Health Survey (NDHS) for babies in the first six months of life is corroborated in this study. As a proxy for estimation, expressed breast-milk was mentioned by only 18% of the respondents as

the second feeding options for children less than six months. Improvement in this rate can be achieved through a comprehensive approach as employed in some countries like Madagascar. Because caregivers have an advantage of seeing mothers almost on a daily basis, simple educational materials, and pictorials through this route may go a long way in influencing mothers to adopt more nutritional and good breastfeeding practices. This study therefore provides evidence on specific areas of focus in designing and planning intervention programs for mothers and preschool caregivers. A comprehensive approach that involves breast feeding counseling, evaluation of Breast feeding policy, instituting baby friendly daycare centres as an extension of the Baby Friendly ™ Hospital initiative may provide the needed support at the community level.

Early detection of diseases

Caregivers rightfully identified measles infection by its symptoms and as the most infectious of the VPDs. A few reported malaria as infectious. Ability to detect illnesses will depend on experience and caregivers' sensitivity to any change from normal in the children's wellbeing. In this present study, whenever a child is ill, regardless of whether it can spread to other children or not, parents are called to pick up their children or child is sent home. This also obtains in Malta. This may be due to experiences of disparity and disapproval of care options between parents and the caregivers or perceived inability to handle even minor health or health related issues. Considerations for the cultural perspective of child care may present cultural conflicts between parents and carers; Wise and Sanson, (2000) and this may be responsible for the predominant practice of sending the child home. Gonzalez-Mena (1993) explored the potential for cultural conflict between parents and carers over such issues as changing nappies, feeding, comforting, toilet training and educating babies.

Australia's well developed childcare response system gives guidelines on various facets of childcare, elaborating on immunization, reporting of diseases and protocols on the management of a few childhood emergencies.

Regular training sessions to enhance this sensitivity skill and identification of these symptoms or health related problems would help the caregivers to better recognize early signs of complications and deal with health issues promptly when they arise (Skolverket, 2000).

As a next step, UNICEF has its top priority focus on health, nutrition, and early child development (gestation through three years of age). This integrated programming approach has been tagged Early Childhood Care for Survival, Growth and Development. It aims to move

research studies to programmatic efforts. **Child focused programs-** It targets services directed to children through day care or center care, and **parent-focused programs-** seeks to enhance parents' abilities to provide care, either through teaching specific skills or improving their life skills through home visiting programs, often combined with group sessions.

This approach recognizes only two target populations. However involvement of preschool caregivers will be more robust. When added, the programme would better qualify the approaches as wholly community-based considering that then *all caregivers* are provided with new skills and information on child management, development and nutrition.

5.1.4 Factors Affecting Knowledge of VPDs:

The study population in this study differ from those previously studied in the environment (Doren et al, ; Angelillo, 1999; Lawoyin, 2007 ; Marie and Gregory, 2000; Wise and Sanson, 2003; Jelleyman and Ure, 2004; Ravhengani et al, 2007; Bofarraj , 2008; Sanusi and Gbadamosi, 2009; Borràs et al, 2009 ; Fredrickson et al, 2004; Odusanya , 2008; Oladokun, 2008) and may account for the peculiarity of a few variable outcomes associated with knowledge of VPDs in this study. Researches from local perspectives or various subgroup analyses are pivotal to understanding regional differences and extrapolating findings from those researches appropriately. The significant factors associated with knowledge of VPDs in this study group are: 'affiliation with healthcare facility in the past; childcare training and a recurring factor identified and widely reported by other researchers- level of education of respondents.

There was a positive association with higher educational status of the respondents. This may be due to the higher level of academic attainment (tertiary level of education) of more than two third of the respondents, however the fact that educational level did not predict good knowledge of VPDs may be due to the high awareness from media which might have generally modified responses positively. Similar findings were observed in Italy (Angelillo et al, 1999; in US (Taylor et al, 1997; Luman et al, 2003). A Spanish study haven described a contrasting report in which level of knowledge and opinions on vaccines was not associated with the level of maternal education attributed it to the mothers tight work schedule. This may contribute to limited exposure to immunization information from media and health facilities.

In this study, the difference in proportion of teachers and purely caregivers is very minimal and further analysis to explore any significant difference in the mean knowledge score regardless of the job specification of preschool employees showed no difference.

Affiliation with healthcare facilities in the past

Caregivers who had worked previously in a healthcare facility are probably more exposed and health conscious due to increased access to health information and a heightened sensitivity derived from the nature of illnesses managed in hospitals. The exposure may have been responsible for their ability to relate more to health related issues and its effect. Respondents in this study were as the highest predictor variable 9.9 times more likely to be knowledgeable about VPDs. Ideally a well formulated school health policy stipulates close affiliations with healthcare workers through school health services in order to help fill the knowledge gaps and give more insight to caregivers and parents on common childhood illnesses and guide its management.

Childcare training

More than two third of the respondents did not have any formal training on childcare before commencing work at these facilities. And when they did after employment, it was usually internally organized by the school administration. The only pre-service formal training of the caregivers can be traced to the National College of Education. Many countries that recognize the importance of care for programming do not yet have the skills to assess, analyze, and take action regarding care. Training and information will need to be provided for leaders and practitioners on the theories and techniques of care (Brenzel et al,). Much of the theoretical basis of care is derived from the combination of social sciences with epidemiology, medicine, and nutrition.

The emphasis on educational systems/ institutional process should provide infrastructure for reaching a large number of people and most similar academic settings provide avenue for directed learning. The exposure to health related information lays the foundation for shaping of attitudes and behaviours which according to (Naidoo and Wills, 2000) are adopted at an early stage.

Since significant provision is yet to be made in any public or private teacher training institution in the country for the production of specialist teachers in early childhood education (Ejieh, 2006) had recommended the production of teachers who specialize in early childhood education. All caregivers are mandatorily entered into as teacher education candidates. Lack of

political will is highly implicated for the lack of appreciation on the need for such specialized preschool training institute. Agreeably, a review of the curriculum of existing institutions particularly the one producing the majority of the educated preschool caregivers might be cost effective. More so, a standard curriculum will help guide the activities of these teachers, such people might make the children lose interest in education as they would not be able to present learning experiences to the children in the stimulating and logical manner prescribed by (Robinson and Robinson, 1968).

Equally effective is the provision of specialized pre-employment courses, centrally coordinated by such units as the childcare unit in the State to help standardize knowledge of childcare and practices within the center. Mandatory pedodidology certification should be obtained following the courses as operates in some developed countries. The training and qualifications required of child care workers vary widely. Each State has its own licensing requirements that regulate caregiver training. These requirements range from a high school diploma, a national Child Development Associate (CDA) credential to community college courses or a college degree in child development or early childhood education.

Regular periodic training on childcare should be compulsorily received at the preschool centers. Quality monitoring units are essential at local/ district levels. Provided with necessary logistic support officers are to ensure that minimum standards are maintained in both public and private pre-primary institutions. There is the need for state Ministry of Education officials to enforce the regulations laid down by the Federal Ministry of Education in regard to the provision of pre-primary education. Some problems from these challenges are now emerging. One of these is the wide variation in infrastructure and facilities and human resources. Preschool educational institutions that do not meet the minimum standards specified by any state's Ministry of Education should be closed down, to be reopened only when the provider complies with the laid down standards.

5.1.5 Factors affecting Practices of Childcare Givers

Broadly, the caregivers' knowledge, beliefs, education, physical and mental health and the confidence to put that knowledge into practice are human resource factors that could affect vaccine coverage and management of childhood illnesses (Johnsson, 1995). Factors identified in this study were related to the occupational profile of the respondents. Consistently, four

variables namely any formal training, worked in a healthcare facility, job specification and 'prior medical check-up' were associated with both knowledge of VPDs and childcare disease prevention practices. Whilst the different levels of education did not predict practice on the logistic regression. The key variable, knowledge of VPDs, a definite form of knowledge was found statistically significant with *disease prevention* practices. Three important inferences can be deduced from the dichotomy between possession and application of knowledge. Caregivers had good knowledge of VPDs but generally disease prevention practices were low.

firstly – In both the bivariate and multivariate analyses, affiliation with health facilities depict the relevance of health information and affiliations. Because in the facilities they may have been exposed to those diseases, an indirect knowledge of diseases may have impacted on their practices and other health related issues. In essence depict how a more focused approach can translate to practical application of the knowledge.

secondly - The didactic non interactive information and teaching styles employed in most institutions may not very well provoke adequately the linkage between knowledge of disease entities and its prevention in terms of their practices

thirdly – Although it has been shown that educational level is a strong factor for establishing good practice in this study, it appears that irrespective of the educational level of caregiver, most caregivers tend to mainly learn on the job and slowly imbibe and adhere to existing practice policies. Continued post employment trainings will bridge existing knowledge gaps for those caregivers with low academic qualifications.

In the epidemiology of health and social sciences, the 'Precede model' highlights various predisposing factor for behavioural change. It proposes that knowledge influences people in the adoption of health information for their good and others.

Practices are inputs of our knowledge that had been translated to action. It is postulated that the recognition of a problem may indicate the level of knowledge and the willingness to act to prevent it (Collings, 2002) however, possession of knowledge on the other hand may not necessarily translate to good practice

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Medical check-up done on Staff and job specification

Most of the respondents in facilities in which prior medical check-up before commencement of work were 18 times more likely to have good practice. Introspectively, any facility that sets in its policies as prerequisite the need for the new employees to have pre- employment and subsequent medical check-up depicts to an extent the consideration of the possible health hazards of disease transmission to the children or vice versa. It is indirectly a reflection of a higher level of health consciousness. However this variable is not a necessary factor for good practice as it did not predict practice in the logistic model.

Those who are teachers were ten times more likely to have good practice than those who are solely caregivers and those who have to combine the two jobs. This variable predicts good practice in the daycares. Majority of the teachers usually have a higher academic qualification compared to those who are solely caregivers.

5.2 LIMITATIONS

1. The assessment of childcare practices relied basically on self reported accounts from the caregivers limiting its validity. In previous studies required that children's immunization cards are checked to validate immunization practice. Hence, the estimates for practice may be over-rated in this study. Information bias was considered minimal for a few of the practice questions particularly for those that did not directly indict caregivers. Many of the questions on practice were on what operates generally in the preschools so incorrect responses were easily identified and addressed before leaving the facilities.

2. The use of another instrument - observational checklist was precluded due to consideration for hawthorns bias because during pretest some of proprietors/ managers' insisted we could not assess them except on pre-planned dates.

3. The assessment of knowledge of the VPDs was enhanced by the use of the local names for the diseases during the interviews. In the Italian study by (Angelillo et al, 1999), the concept of severity of VPDs helped mothers who were not knowledgeable of the disease at first hand recall of its symptoms.

4. Design effect for the cluster sampling technique used in the sample size determination.

CHAPTER SIX

6.1 SUMMMARY AND CONCLUSIONS

This research proffers insight/ hypothesis into the diverse strong points and limitations in the knowledge base of caregivers with regards VPDs and the practices of childcare in Ibadan. The pre-school caregivers on one side were considerably aware of VPDs but on the other hand, childcare practices are grossly inadequate. This reflects that specific knowledge on a subject does affect its practice: in this instance, vaccine preventable diseases. Further research would be required to evaluate this finding in other settings.

Globally, several strategies had been explored to improve child health. The study highlights the part that preschool care-givers play in the comprehensive approach to combat vaccine preventable diseases and deaths. It also shows the need for appreciation and involvement of the many roles of caregivers to develop effective community based strategy and impact.
This will require leadership and stronger health systems to reach more children, their mothers, and targeted human and financial resources factors (Sanson et al, 2003).
Innovative, simple and cost-effective strategies are critical.

Available evidence imply that early childhood education for caregivers influence positively on the development of children in daycare and some writers on early childhood education have asserted that investing in it can yield high returns (Barnett, 2006; Rolnick & Grunewald, 2003).

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6.2 RECOMMENDATIONS

1. To better harness the contributions of caregivers and correct knowledge and practice gaps, there is a need for policies and regulations regarding running of the preschools at the state levels to be guided be operations research.
2. There is need for a review of the childcare curriculum at the training centers producing most of the teachers to reflect best childcare practices in the world.

3. For the regulatory childcare units at the state Ministry of Health to organize regular training of caregivers and institute stricter guidelines for the employment of caregivers and running of the schools.

4. The duties of caregivers from this study could extend more beyond the children under their care. It can extend more productively to parents as advocates/ additional communication channels on the benefits of immunization and good childcare practices.

5. .Media is a powerful tool for social change and its continued use is encouraged in promoting childcare practces. Positively, McDivitt et al, in a study conducted in the Philippines in 1990, found that mass communication campaign promoted behavioural change. Other authors further suggested that two channels in combination - mass and interpersonal - work better than one alone.

6. Traditionally, healthcare professionals have important roles in school health programmes at every level. A wholesome affiliation with healthcare in this study predicted good knowledge of VPDs and practices. The parents- teachers association provides an avenue for such interaction and thus re-inforcing of good practices by healthcare teams on health and health related issues.

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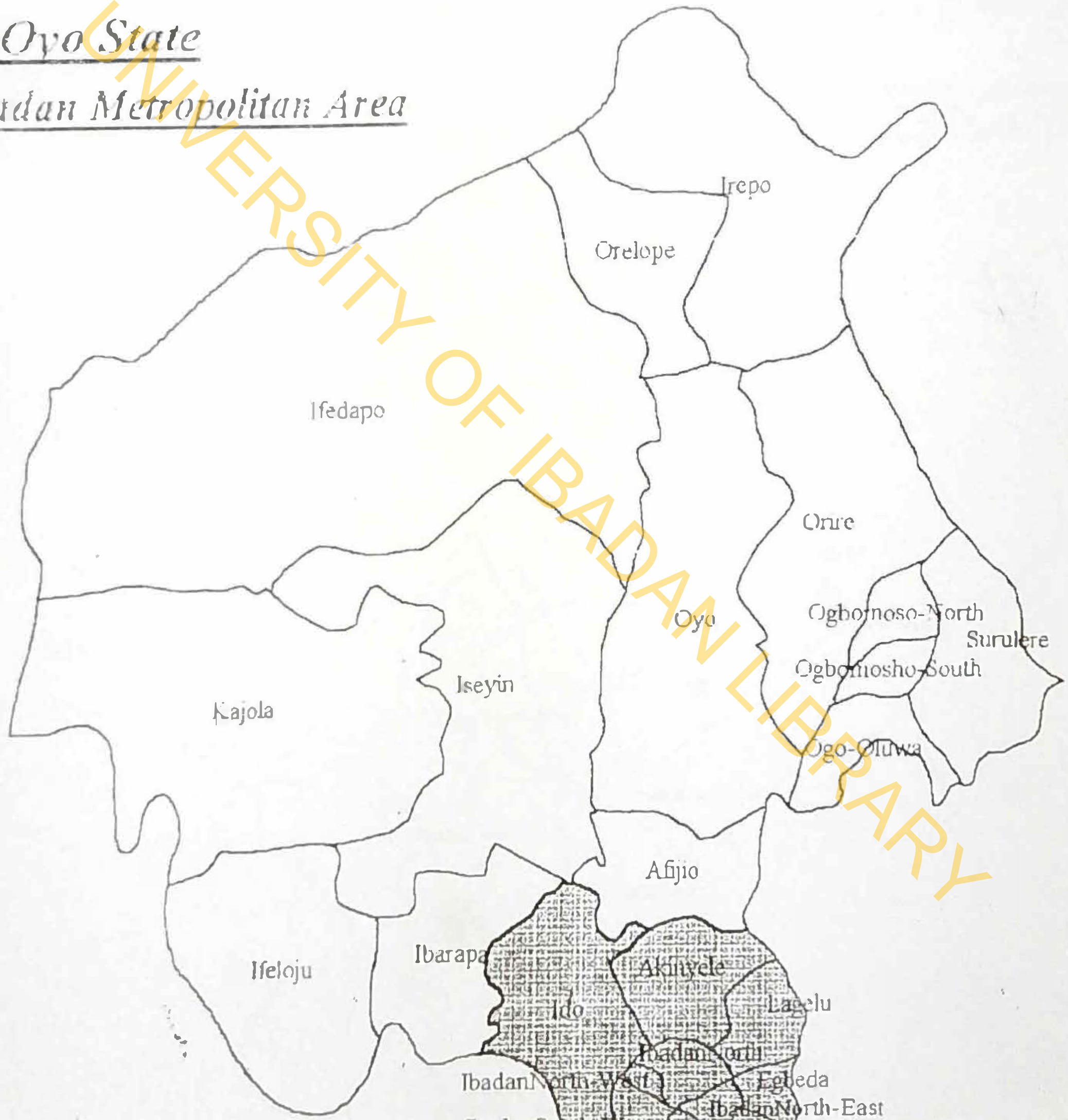
Oyo State

Showing Ibadan Metropolitan Area



Map 1a

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IBADAN METROPOLITAN AREA

Akinyele

Ido

Lagelu

IbadanNorth

IbadanNorth-West

Egbeda

IbadanNorth-East

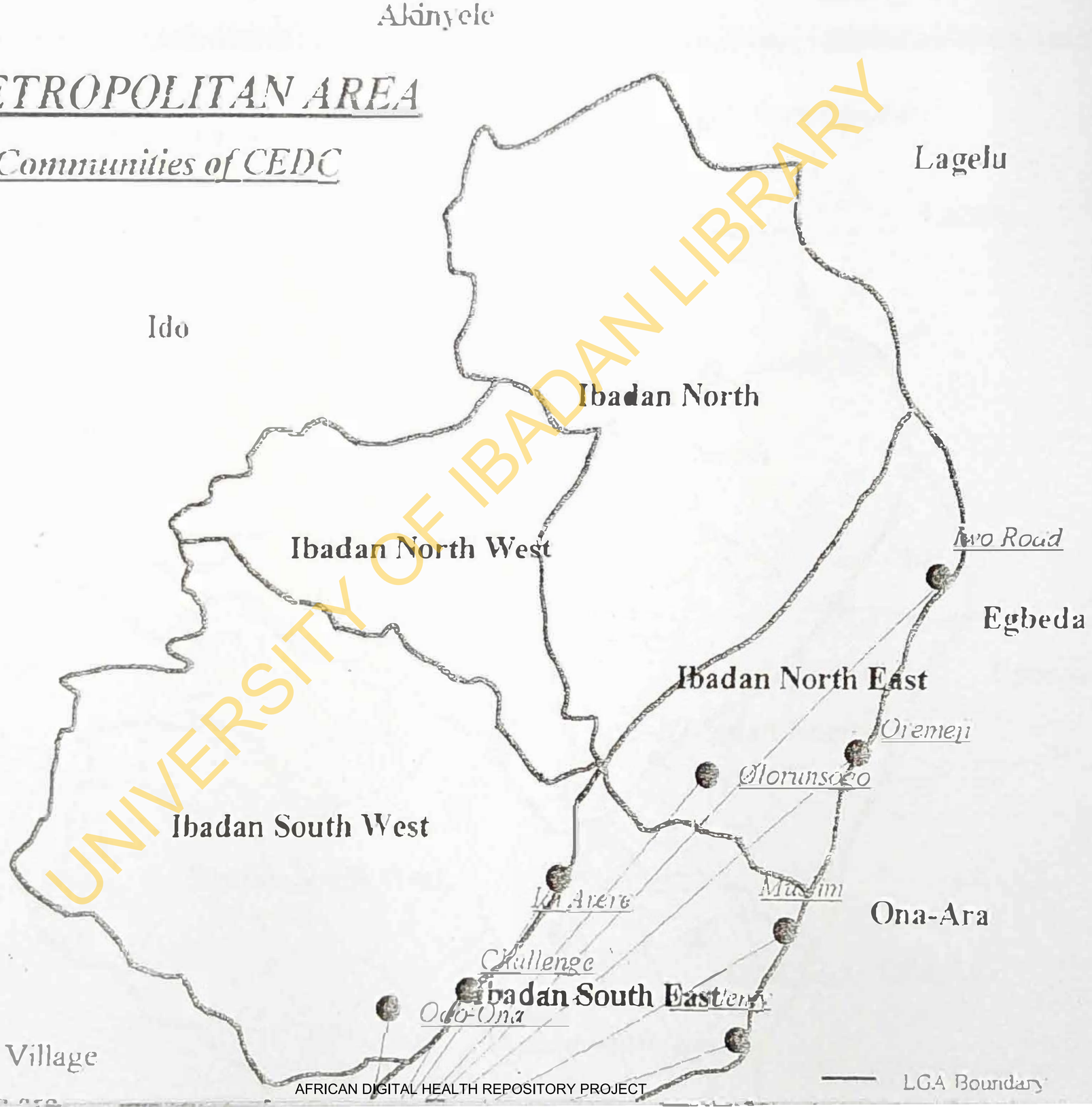
IbadanSouth-West

IbadanSouth-East

Ona-Ara

IBADAN METROPOLITAN AREA

Residence Communities of CEDC

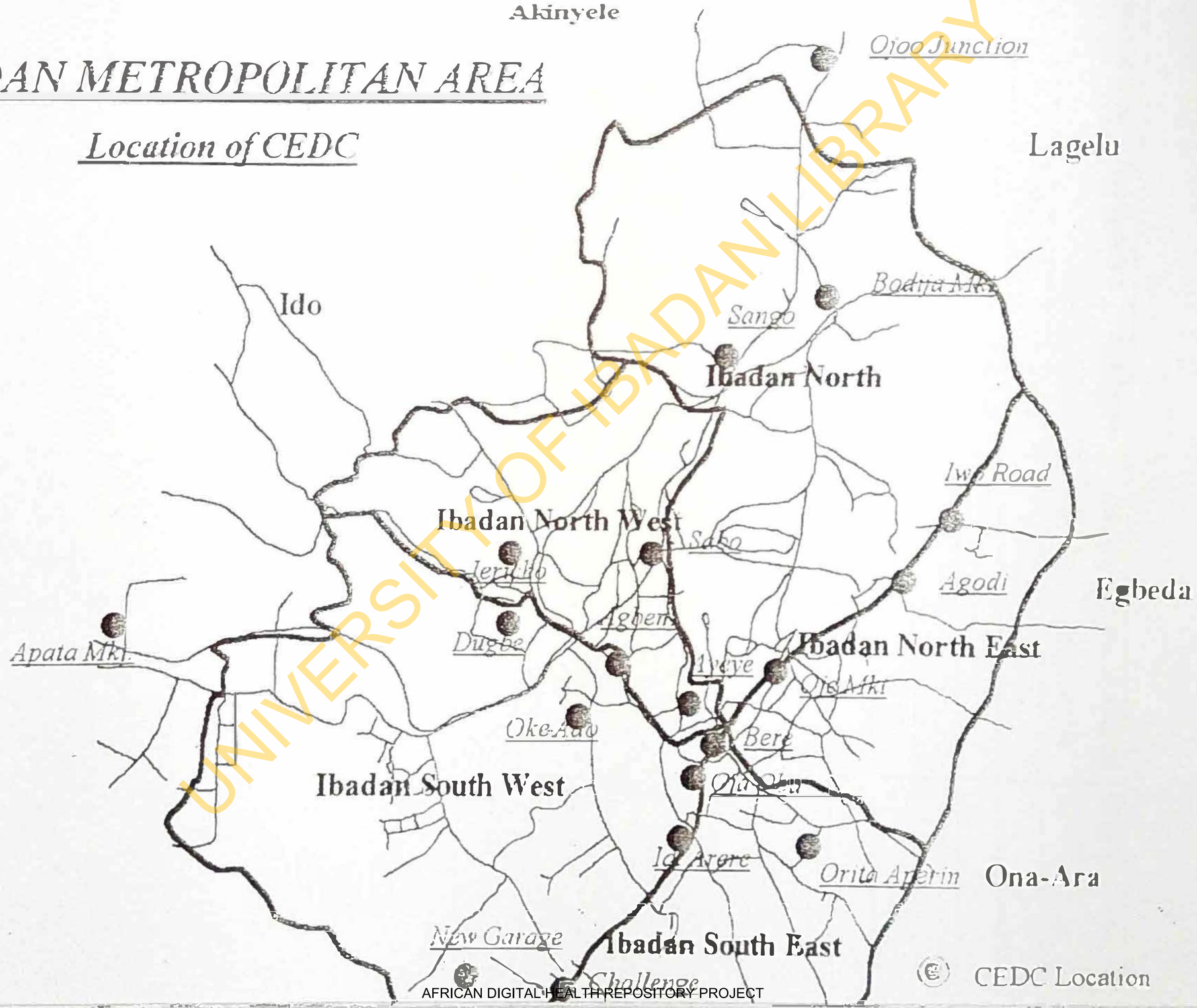


Note:

Idi-Ayunre and Podo Village south of the Toll Gate are

IBADAN METROPOLITAN AREA

Location of CEDC

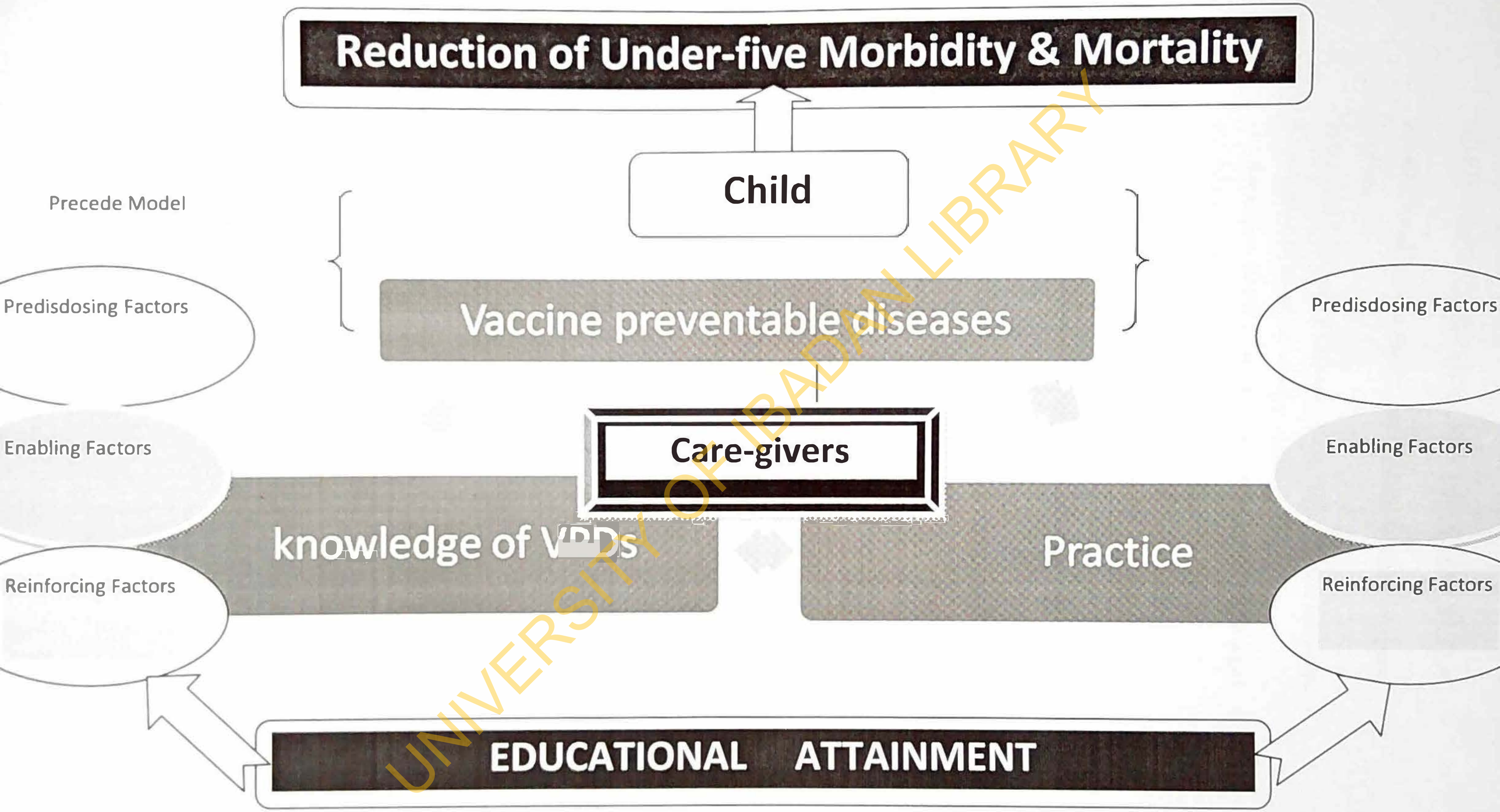


APPENDICES

Appendix II

s/n	Local Government Area	Headquarters	Population	Political Wards	No of selected communities	Sampling ratio
1.	Ibadan North	Bodija	316,612	12	12	4
2.	Ibadan North East	Agodi	340,972	11	3	1
3.	Ibadan North West	Onireke	157,725	12	6	2
4.	Ibadan South West	Mapo	274,559	12	3	1
5.	Ibadan South East	Oluyole	291,628	10	3	1

Appendix iii



GUIDELINES FOR SETTING UP A DAY CARE CENTRE

1. suitably fenced accommodation, preferably a bungalow with good drainage.
2. There must be at least six spacious rooms with adequate ventilation.
3. A room must be provided with decent cots for babies
4. The classrooms should be provided with desks and tables for pupils,' table and chairs for the teachers.
5. There must be adequate qualified teachers and Child Care Givers.
6. A room should be set aside to serve as sick-bay with a mattress placed on a decent mat with bedsheet and mackintosh.
7. There should be a store with a cupboard for storing in-door playing materials e.g. toys.
8. Shelves to be partitioned into cubicles for lunch bags must be provided.
9. A playground for out door play must be provided with the following equipment:-

    i. Swings
    ii. Merry-go-round
    iii. Slides
    iv. Rocking horses
    v. Sea-Saw

10. First Aid Box.
11. Bowl stands with bowls and hand bowls
12. Toilet and bathroom.
13. Water Tank.
14. Refuse drum
15. Kitchen.

Knowledge of Vaccine Preventable Diseases (VPDs) and Childcare Practices among Preschool caregivers in Ibadan North Local government, Oyo state.

Training schedule for interviewers on the May 20, 2010

Time	Monday
8.30- 9.00a.m	Welcome&Opening Goals and Objectives of project, Methods Expected results Team roles and Functions, Team spirit Instructions for Interviewers Communication skills & Interviewing Tech. *Dr Obiagwu Adaora .E*
9.00- 10.00a.m	Research Ethics Consent, Confidentiality, Cordiality Conducting Interviews - Entry - Selection of respondents(sampling) *Dr Obiagwu Adaora .E*
10.00- 10.30a.m	*Tea -break*
10.30- 11.30a.m	Infectious diseases Measles - Tuberculosis - Poliomyelitis Management &Prevention *Dr Obiagwu Adaora .E*
11.30- 12midday	Interview conditions Classroom practice - Field interviews Review and discussion *All*
12midday- 12.30p.m	*Lunch break*
2p.m – 2.30pm	Overcoming interviewers problems - Interviewers feedback Review and discussion *All*

Communication Skills

MSc project

Interviewers' Training

Adaora E. Obiagwu

March 24, 2010

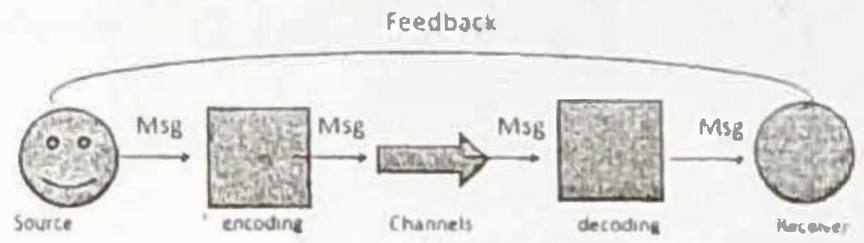
Introduction

- Effective communication is all about conveying your messages to other people clearly and unambiguously.
- Receiving information that others are sending to you, with as little distortion as possible.
- Successful = sender and the receiver understand the same information.
- Requires senders and the receiver effort
- Understand what your message is, what audience you are sending it to, and how it will be perceived. You must also weigh-in the circumstances surrounding your communications, such as situational and cultural context.

Why Effective?

- Error fraught process- tremendous confusion
- wasted effort
- missed opportunity
- muddled messages by the sender
- misinterpreted by the recipient.

Communication Process



- **Source...**
  As the source of the message, you need to be clear about why and what you want to communicate.
  Be confident that the information you're communicating is useful and accurate.
- **Message...**
  The message is the information that you want to communicate.
- **Encoding...**
  Process of transferring information you desired into a form that can be sent and correctly decoded at the other end.
  Depends on your ability to convey information clearly and simply. Ability to anticipate and eliminate sources of confusion (for example, cultural issues, mistaken assumptions, and missing information.)
- key - know your audience

- **Channel...**
  Conveyed through channels, with verbal channels including face-to-face meetings, telephone and video conferencing, and written channels including letters, emails, memos and repons.
  Different strengths and weaknesses. E.g. giving a long list of directions verbally is ineffective.
- **Decoding...**
  Is a skill (taking the time to read a message carefully, or listen actively).
  Decoding errors common if decoders' knowledge of message is not enough
- **Receiver...**
  Delivery to individual members of your audience.
  Sensitive to actions or reactions you hope to get from this audience.

  Each individuals enters into communication process with ideas and feelings that will influence their understanding of your message, and their response. Act appropriately then.

- **Feedback...**
  Can verbal and nonverbal reactions to your communicated message.
  Pay close attention to this feedback, as it is the only thing evidence of understanding- Confidence

  If misunderstood, at least you have the opportunity to send the message a second time.

- **Context...**
  The situation in which your message is delivered .
  Include the surrounding environment or broader culture (corporate culture, international cultures, and so on).

Removing Barriers at th Stages

- Make a Great First Impression": This is e if you're going to have the chance to communicate your message
- Avoid lengthy, disorganized message
- Correct errors.
- Avoid poor verbal and body language
- Avoid offering too much information too less is often times more.
- Be mindful of the demands on other peo time, especially in today's ultra-busy soc

Communications Skills Importance of Removing Barriers

- Essential both personally and professionally.
- Problems with communication can pop-up at every stage of the communication process.
- Each stage is potential for misunderstanding.
- Goal should be to lessen the frequency of problems at each stage with clear, concise, accurate, well-planned communications.

Team work

Individuality in some certain tasks is unreasonable

In the 21st century, as people are becoming more sophisticated and society is becoming more technically advanced, working as a team makes it easier to accomplish goals.

- Teamwork is the capability to comprehend and recognize the diverse strengths and abilities in a group setting and then applying them to one final solution according to Drs Gregatti & Sirois(Oxford University ,Belarus).

Where needed!

- Sports - where it is well known and accepted
- Job interview - team players sought
- Business - a form of corporate-speak. teamwork is the desired goal of many organisations, efforts are made to coordinating team building events in an attempt to get people to work as a team rather than as individuals.

Why team play?

- Larger, ambitious goals usually require that people work together with other people.
- Companies today want people who are able to get along with their colleagues and work together in a cohesive group.
- It enables you to do so much more.
- Doing > one person could do alone &the creation of something out of nothing is a large part of the importance of using teamwork.

Teamwork

Building a Team - 1

- Much more to it than tossing a group together and telling them to get to work.
- Aim is to build your team up to be an effective tool for the cause.
- Always begin with a look at teamwork itself & the importance of it to each individual as well as the whole team.
- Importance to all should not be assumed.
- Every team functions differently.

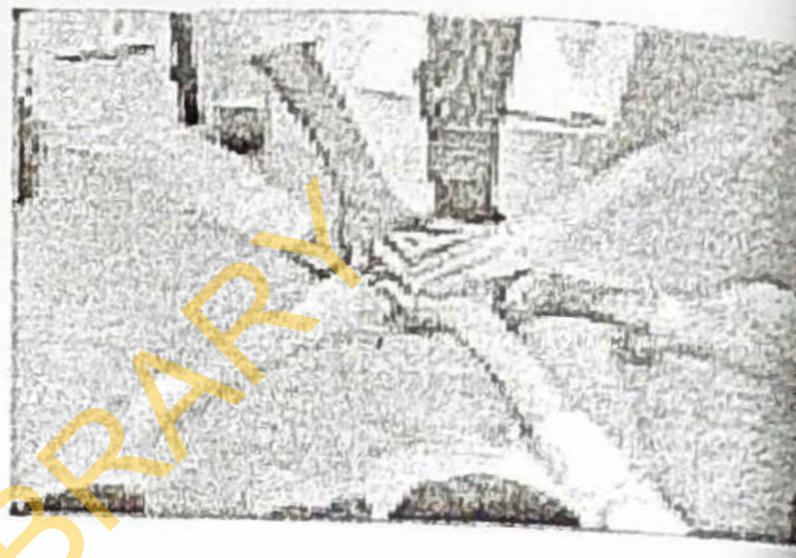
Building a team- 2

- No task is too small when you have a team that is willing to go the distance to move mountains and achieve nothing less than success.
- Note that views differ. Opinions are likely to differ and personal issues can arise.
- Set those issues aside while focusing on the greater good.
- Bigger stakes such as a big sale or client contract, team should understand what is important and do all that they can to obtain that outcome.

Effects of Teamwork

- Empowers a team to discover that they have achieved something that never would have been possible otherwise.
- Growth in both confidence and skill.
- Much more effective in doing work.
- Problem solving and idea building.- to address issues, it is up to teams to work together in reaching a realistic outcome that everybody can live with.

Team spirit



Advantages

- More information and knowledge focus on the issue
- Dev. of greater number & diversity of alternatives
- Better understanding & acceptance of final decision
- Members develop knowledge and skills for future use
- Shared responsibility - willing to take more risks

Disadvantage

- Time consuming
- Disagreements may delay decisions an cause hard feelings.
- One or two group members may domi discussion
- Many ideas may be forgotten if no note taking.
- Manipulative and calculative tendencie

- An individual has not started living until he can rise above the narrow confines of his individualistic concerns to the broader concerns of humanity

- Martin Luther King Jr.-

...NT OF EPIDEMIOLOGY, MEDICAL STATISTICS & ENVIRONMENTAL HEALTH
FACULTY OF PUBLIC HEATLH
COLLEGE OF MEDICINE
UNIVERSITY OF IBADAN, NIGERIA.

...2-2413906, 8103168

...Ext. 2661
...3545, 2413906
...kannet.com

Ag Head: Dr Lola Vivian Adekunle

July 23rd , 2009

The Director,
Women Affairs Commission,
Child Welfare Unit,
Oyo State Ministry of Health.
Ibadan.

Dear Sir,

I write to introduce Dr. Adaora E. Obiagwu who is a postgraduate student in the Department of Epidemiology, Medical Statistics and Environmental Health, University of Ibadan, Ibadan.

She is carrying out a research work in fulfillment of her MSc (Epidemiology) degree, she needs to carry out some practical /sample collection.

I shall be grateful if you will give her necessary assistance.

Yours Sincerely,

Lola V. Adekunle

DEPT OF EPIDEMIOLOGY, MEDICAL STATISTICS & ENVIRONMENTAL HEALTH

FACULTY OF PUBLIC HEALTH

COLLEGE OF MEDICINE

UNIVERSITY OF IBADAN, NIGERIA.

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Ag Head: Dr. Lola Vivian Adekunle

O.A. Fawole, Reader
MBBS (Ib), MSc (Epid & Biostat) (S.Africa) FMCPH (Nig).
FWACP, Cert. Clin Epid. (S.Africa)

L.V. Adekunle, Reader
BSc (Ife), MPH (Epid & Soc. Med.), (Israel) PhD (Ib)

A.O. Ajayi, Senior Lecturer
MBBS (Ib), FMCCP (Nig.), FWACP (CP), MCCLSC (Canada), MPH (Ib), PhD. (Ib)

A. A. Fawegan, Lecturer
MBBS (Benin), MSc (Epid & Med Stat.), FWACP

M. O. Ilesanmi, Lecturer
MBBS (Ib), MSc (Epid & Med. Stat.), FMCPH (Nig)

B.O. Akinkunmi, Lecturer
MBBS (Ib), MSc (Ib).

O. Ayeni, Visiting Professor
BSc (Ib), MSc (Med. Stat. Lond.), PhD (Lond.)

E. A. Bamgboye, Professor
BSc (Lagos), MSc (Med. Stat. Lond.), PhD (Lond.), MFS (US), FSS (Lond)

O.B. Sowemimo, Lecturer
BSc (Ib), MSc (Ib), PhD (Ib.)

A. S. Onayade, Lecturer
[illegible]

[illegible], Assistant Lecturer
[illegible], MSc (Ib.)

[illegible] Ass. Lecturer
[illegible]

[illegible] Research Fellow
[illegible]

[illegible], Lecturer
[illegible]

[illegible], Lecturer
[illegible]

O. A. [illegible], Lecturer
[illegible]

M. C. Asuzu, Professor
MBBS (Ib), DOH & SM Sc (McMaster), FMCPH (Nig)

A. G. Falusi, Professor
[illegible]

A. O. Olabode
MBBS (Ib), MSc (Epid & Med. Stat.), [illegible]

A. Lawoyin, Associate Lecturer
MBBS (Ib), FMCPed (Nig), MSc (Ind.) (Ib)

July 15, 2009

The Chairman,
Local Schools Board,
Ibadan North LGA,
Ibadan.

Dear Sir,

I write to introduce Dr. Adaora E. Obiagwu who is a postgraduate student in the Department of Epidemiology, Medical Statistics and Environmental Health, University of Ibadan, Ibadan.

She is carrying out a research work in fulfillment of her MSc (Epidemiology) degree, she needs to carry out some practical /sample collection.

I shall be grateful if you will give her necessary assistance.

Yours Sincerely,

Lola V. Adekunle

TELEGRAMS.....

TELEPHONE.....

MINISTRY OF HEALTH

DEPARTMENT OF PLANNING, RESEARCH & STATISTICS DIVISION

PRIVATE MAIL BAG NO. 5027, OYO STATE OF NIGERIA

Your Ref. No. .....

All communications should be addressed to the Honorable Commissioner quoting

Our Ref. No. AD 13/ 479/ 221

18th June, 2012

The Principal Investigator,
Department of Epidemiology,
Medical Statistics & Environmental Health,
College of Medicine,
University of Ibadan,
Ibadan.

Attention: Adaora E. Obiagwu

Ethical Approval for the Implementation of your Research Proposal in Oyo State

In response to your letter requesting for ethical approval for the implementation of your Research Proposal titled: - "Knowledge of Vaccine Preventable Diseases and Childcare Practices among Pre-School Caregivers in Ibadan, Oyo State."

2. The committee has noted your compliance with all the ethical concerns raised in the initial review of the proposal. In the light of this, I am pleased to convey, to you, the approval of committee for the implementation of the Research Proposal in Oyo State, Nigeria.

3. Please note that the committee will monitor, closely, and follow up the implementation of the research study. However, the Ministry of Health would like to have a copy of the results and conclusions of the findings as this will help in policy making in the health sector.

4. Wishing you all the best,

OYO STATE RESEARCH ETHICAL REVIEW COMMITTEE
MINISTRY OF HEALTH

Mr. V. V. Arepeju
Signature & Date
Director, Planning, Research & Statistics
Oyo State Research Ethical Review Committee

Knowledge of Vaccine Preventable Diseases (VPDs) &Childcare Practices among Preschool caregivers in Ibadan , Oyo state.

Field Work

June 14, 2010

Dear Stella Ebule

In view of the commendable performance and conduct observed during your participation as research assistance in this project, there has been an increment that overrides the previously stipulated terms from effect of the start of your study.

Sample size	800 care givers				
No of interviewers	Expected Questionnaires	Working Days	Amount	Transport	
				Available	Unavailab
1 interviewer	130 questionnaires	*As long as target is achieved*	6500	1000	1500
1 interviewer	13 questionnaires	1	650	100	150-250

Date	Number of working Days uused	Interviewers outputs	Amount received	Signature
July 4, 2009		SELF COLLECTED	₦2,000.00	
July 20, 2009		DR ADAORA OBIAGWU	₦1,200.00	

- Keep in mind always that you always represent an entity.
- Daily review and serial numbering of questionnaires will determine how many interviews you conducted and as such determine your remuneration which with transport fare totals..... at maximum output
- Failure to complete the 10 working days will attract a financial penalty of ₦1,000 deduction on agreed terms.

The above stated terms are acceptable by me Stella Ebule and I have received the above stated amount

Signature ..... for Stella.

Date 20th July, 2010

PROJECT BY: DR. ADAORA E. OBIAGWU

Questionnaire

Knowledge of Vaccine Preventable Diseases and

Childcare Practices among Preschool Caregiver in Oyo State.

Dear Respondents,

I am a postgraduate student of the Department of Epidemiology, Medical statistics and Environmental Health, College of Medicine, University of Ibadan carrying out a research on the above topic in this Local Government Area.

I would appreciate your honest responses and cooperation in filling the questionnaire below. Your participation is voluntary and information gathered will be handled with strict confidentially. Would you be willing to participate? If yes kindly append your signature (Signature of respondents certifies informed consent has been given).

Name.....
(Interviewer)

Signed .....
(Respondent)

Result codes –

1.completed 2. partially completed 3.respondent refused 4. other

SECTION A: Demographic and Socioeconomic Data

1. **Name of school** .....

2. **Area**..... 2. **Registration Status** (1) Yes (2) No ☐

3.Age (last birthday) .....

4.Gender: (1) Male (2) Female ☐

5.Marital Status ☐

1. Single (never married)
2. Married
3. Co-habiting
4. Separated
5. Divorced
6. Widowed

al number of biological children alive.....

Age category	Number fully immunized	Partially immunized	Not immunized
≤5years			
>5years			
Total			

ghest educational level.....

1. None
2. Any Primary
3. Completed Primary
4. Any Secondary
5. Completed secondary
6. Tertiary - a. Diploma, b NCE, c.OND d. HND e. University, f.Masters

Religion

1. Christianity
2. Islam
3. Others (please specify).....

Ethnic group

1. Yoruba
2. Igbo
3. Hausa
4. Others (please specify) .....

. Occupation Profile

1. Daily duration of service (hours) .....

2. Current job specification (tick as many as applicable)

a.Teacher
b.Child caregiver
c.Others (specify) .....age of children in class.....

3. Months of work experience in present place of employment.....

4 Total number of years as a childcare worker.....

5.Did you have any formal training on childcare (1) Yes (2) No

5. a.Internal b.church c. MOH d.college of education e. others

6.If you answered yes, please specify how regular/year.....

7.

S/no	Name of programme	Date /Duration of programme
1		
2		
3		
4		
*5		

*please specify the most recent training in row 5 above.

8. Have you ever worked in health care facility? (1) Yes (2) No ☐

9. Do you currently have another job besides this one? (1) Yes (2) No ☐

9. If yes, please specify type.....

10. Monthly Salary.....

11. Pre-employment medical examination is done before resuming work. (1) Yes (2) No ☐
If yes, please specify which ones.....
.....
.....

12. Routine medical checkup is done for staff? (1) Yes (2) No ☐

IMMUNIZATION & VACCINATION

How does vaccines work in the body to protect against vaccine preventable diseases?.....

12	Mention five Childhood Vaccine preventable diseases you have heard of or know of?	1..... 2..... 3..... 4..... 5.....

SECTION B 1. INFORMATION SOURCES OF VACCINE PREVENTABLE DISEASES

13	Your source(s) of information on vaccine preventable diseases include **Please tick appropriate answers**	1. TV 2. Radio 3. Newspaper/Magazine 4. Friends 5. Relations 6. Neighbours 7. Seminars in current school 8. Programmes 8. Specify others pls.....

SECTIONB 2 - PREVENTIVE PRACTICES OF CAREGIVERS

	Practice of Diseases prevention	local herbs (agbo)	vaccines	mixing both
14	a. Which is the best approach you employ to childhood disease prevention?			
	please specify others			
	b. Which of the above do you do for your children			
	Immunization practice in the schools	Always	Sometimes	Never
15	Do you communicate messages on the importance of immunization to parents?			
16	Do you determine immunization status of the children e.g. Checking immunization cards a. before admission or when they have measles			
17	Do you allow Immunization plus exercises in this facility?			
18	You would allow immunization for children with cold and diarrhea?			
	Handwashing hygiene			
19	Immediately you get to work before you start handling the children			
20	Washing of hands before feeding each child			

21	Washing of hands after using the toilet			
22	Washing of hands after removing each child's soiled pampers or cleaning buttocks			
	Feeding practices	Always	Sometimes	Never
23	Which of the following is mostly done before feeding a child - if the food is too hot, you 1. taste before giving the child			
	2. leave to cool			
	3. Blow the food with mouth			
	4. fan to cool			
	5.put container in a bowl of water			
24	Chew food to soften it before feeding			
25	Children share cups, spoons to feed			
26	Do you force feed children unwilling to eat?			
	Nutrition			
27	Do children have their meals brought in from home			
28	Children aged 1month-6months, when hungry, are given what? 1. Expressed breast milk			
	2. Formular feed			
	3.PlainPap			
	4.breastmilk from lactating caregivers			
29	If your answer to question 28 above is expressed breast-milk, how is it preserved? 1. kept in warmers			
	2. Refrigerated			
	3. Frozen			
	4. In feeding bottles unattended to			
	5. Others pls specify			
30	Do you warm the breast-milk just before feeding			
	Mention the options as they are given	**First**	**Second**	**Third**
31	For children who can not have breastmilk , the commonest complementary food given is			
32	Children between 6months & 5years eat mainly			
	Environmental Sanitation			
33	Which cleansing agents are used to clean tables, chairs,floor			

34	Which antiseptic agents are used to clean surfaces – tables, chairs, surfaces etc.				
35	How many times are classrooms cleaned per day	Once	Twice	Thrice	>Thrice
	Practice on Diseases spread/prevention	**Always**		**Sometimes**	**Never**
36	Do you give agbo to the sick children				
37	Which of the vaccine preventable diseases and other illnesses can spread to other children fast if one of them is infected **Please tick the respondent's option(s)**				
	1.Polio				
	2.Tuberculosis				
	3.Measles				
	4.Tetanus				
	5.Diphtheria				
	6. Pertusis				
	7.Conjunctivitis				
	8. Chicken pox				
	9.Diarrhoeal diseases				
	10. Others, pls specify				

The options to the next set of questions could be **(1- True), (2- False) , (3- Don't know)**

	Knowledge of causes of VPDs	Measles	TB	Polio	Tetanus	Pertusis	Diphtheria
38	Punishment for parents sins						
39	Infective agent-Virus						
40	Evil spirits and witches						
41	Infective agent -Bacteria						
42	Exposure to too much sunlight						
43	Others, please specify						

	Knowledge of transmission risks for VPDs	True	False	Don't know
44	Dead tissues & deep dirty wounds provide good conditions for tetanus			
45	HIV/AIDS infection does not increase TB's transmission risk			
46	The risk of measles increases whenever infants and children are overcrowded in a place			
47	Fresh air in the classrooms can help spread respiratory infections			

The options to the next set of questions could be (1- True) , (2- False) , (3- Don't know)

	Knowledge of transmission VPDs	Measles	TB	Polio	Tetanus	Diphtheria	Pertusis
48	Transmission thro foods or drinking water contaminated with faeces						
49	through mosquito bites						
50	Contact with nose & throat secretion sneezes, coughs of infected persons						
51	through injection with contaminated needles & syringes or sharp objects						
52	Directly through wound sites						
53	Others please specify						

Knowledge of symptoms and treatment of Vaccine preventable diseases

	Give three specific symptoms for the following diseases			
54	Measles			
55	Tuberculosis			
56	Polio			
57	Tetanus			
58	Diphtheria			
59	Pertusis			

	Treatment Options-	Measles	TB	Polio	Tetanus	Diphtheria	Pertusis
60	Using of bitter leaf						
61	Antibiotics						
62	Palm oil & palmwine						
63	Agbo						
64	Antipyretic						

Technical terms in Yoruba translation

VPDs	Vaccines	Yoruba translations
Tuberculosis	BCG	Iko fee
Trivalent oral polio	OPV	Romolapa romolese
Measles	Measles	Eyi , ita, iletutu
Diphtheria,	DPT	Gbofungbofun
Pertusis	DPT	Awubi
Tetanus	DPT	Eranpa , ipa, Makinje
Yellow fever	Yellow fever	Iba ponju
Hepatitis	Hib	Jedojedo

IWE ABINILERE

IMO NIPA AWON ARUN TI ABERE AJESARA NDENA ATI ISE ITOJU OMODE LARIN AWON OLUTOJU AWON OMODE TI KO TI BERE ILE –IWE NI IPINLE OYO.

Oludahun tooto,

Mo je akeko giga ni eka Isiro ilera ati ilera ayika, Ile iwe giga ilo ogun fun iwosan ti Ile Iwosan Orita mefa, Fasity Ibadan ti n se iwadi lori imo nipa nkan ti a ko si oke yi ni ijoba ibile yi ati Agbegbe re. Inu mi yo dun lopolopo nipa idahun ati ifowosowopolati dahun awon ibere ti o wa ni isala yi. Lile wo nimu eto yi je tokan yi ba fe aripe gbogbo awon idahun wonyi yo wa ni ipamo fun asiri . Nje e ni fe lati dara po? Ti o ba je beeni eba wa fi owo si iwe yi (ifowosi awon oludahun tumo si ipinu lati kopa)

Oruko _____ **Fi owo si** _____ **(Olul re)**
(Oludahun)

Esi idahun koodu

1. O pe tan 2 O pe die 3 Oludahun ko gba 4 Awon miran ☐

Eka A: Imo nipa ara eni

1. Oruko ile iwe. .....
2. a.Agbegbe.....
2. b Se e ti oruko sile pelu ijoba 1. Beeni 2. Beeko ☐
3. Ojo ori (ojo ibi to se gbehin) _____
4. Okunrin / Obinrin (1) okunrin (2) obinrin ☐
5. O ti ni iyawo / loko
   1. Ko ti (lay./loko)
   2. Ou loko / oti laya ☐
   3. Won jo n gbefe
   4. Won ti pinya
   5. Won ti ko ara sile
   6. Opo

3. Iye Osu ti o ti fi sise ni ibi ti o ti nsise yi? .....

4. Apapo iye odun ti o ti fi sise gege bi olutoju omode? .....

5.a. Nje o ti ko eko nipa itoju omode (1)Beeni (2)Beeko

Ti idahun re si ibeere 5 ba je beeni ,nibo ni o ti gbeko

5b. Larin awon olutoju nibiyi b.ile ijosin c. eka ilera ti ijoba d. Ile eko giga ti a tin ko bi a tin ko ni leko e awon miran

6.Ti idahun re si ibeere 5 ba je beeni,igba melo lodun ni.....

7.

SN	Oruko eto nna	Igba ti e se ati iye ojo ti e fi se
1		
2		
3		
4		
*5		

*Ko eyi ti e se kehin sibi.

8. Nje o ti sise ni ile itoju ilera ri? (1)Beeni (2)Beeko

9. a. Nje o hun se ise miran yato si eyi ? (1) Beeni (2) Beeko

9. b. Ti o ba je beeni se alaye .....

10. Iye Owo osu re .....

11. Nje won se ayewo ilera re ki o to bere ise (1) Beeni (2)Beeko

Ti idahun re ba je beeni,fowo daruko won.....

12. A nna ti se ayewo ilera awa osise lorekore (1)Beeni (2) Beeko

	Abere ajesara	
11	Bawo ni abere ajesara se nsise lati dena arun?.....	
12	Daruko aisan marun ti o gbo tabi ti o mo ti abere ajesara le dena?	1..... 2..... 3..... 4..... 5.....
	EKA B 1 ORISUN IMO NIPA AWON AISAN TI ABERE AJESARA LE DENA	
13	Mu idahun ti o ba ibi ti o ti gbo nipa abere ajesara nu	1.Telifison 2. Asoromagbesi 3. Iwe Iroyin 4.Ore 5. Ibatan 6. Aladugbo

3

6.Apapo gbogbo omo ti o bi to wa laye.....

Pipin oja ori	Iye awon ti o ti gba abere ajesara pe	Iye awon ti ko gba abere ajesara pe	Iye awon ti ko gba rara
Odun marun si isale			
Odun marun ati ju be lo			
Apapo			

7. Ibi ti o kawe de/tabi ti o ka we nio

1. Ko ka rara
2. Eko alako bere lai pari re
3. Pipari eko alakobere
4. Eko girama lai pari
5. Mopari eko girama
6. Eko giga

a.Diploma b. NCE c. OND d. HND e. University degree f. Masters

8. Esin

1.Omolehin Kristi
2.Musulumi
3.Awon miran (so nipa to) .....

9: Eya

1. Yoruba
2. Igbo
3. Hausa
4. Awon miran (so nipa to) .....

10. Ise ti o nse

1. Wakati melo ni o ma nlo nibise lojojumo.....

2. Iru ise ti o nse nisinsinyi

i. Oluko ni (Kilasi wo ni).....

ii. Emi nioju omo

iii. Awon miran (so nipa to) .....

2

3. Iye Osu ti o ti fi sise ni ibi ti o ti nsise yi? .....

4. Apapo iye odun ti o ti fi sise gege bi olutoju omode? .....

5.a. Nje o ti ko eko nipa itoju omode (1)Beeni (2)Beeko

Ti idahun re si ibeere 5 ba je beeni ,nibo ni o ti gbeko

5b. Lara awon olutoju nibiyi b.ile ijosin c. eka ilera ti ijoba d. Ile eko giga ti a tin ko bi a tin ko ni leko e awon miran

6. Ti idahun re si ibeere 5 ba je beeni,igba melo lodun ni.....

7.

SN	Oruko eto naa	Igba ti e se ati iye ojo ti e fi se
1		
2		
3		
4		
*5		

*Ko eyi ti e se kehin sibi.

8. Nje o ti sise ni ile itoju ilera ri? (1)Beeni (2)Beeko

9. a. Nje o lun se ise miran yato si eyi ? (1) Beeni (2) Beeko

9. b. Ti o ba je beeni se alaye .....

10. Iye Owo osu re .....

11. Nje won se ayewo ilera re ki o to bere ise (1) Beeni (2)Beeko

Ti idahun re ba je beeni,jowo daruko won.....

..... 12. A ma n se ayewo ilera awa osise lorekore (1)Beeni (2) Beeko

	Abere ajesara	
11	Bawo ni abere ajesara se nsise lati dena arun?.....	
12	Daruko aisan marun ti o gbo tabi ti o mo ti abere ajesara le dena?	1..... 2..... 3..... 4..... 5.....
	FRAB I ORISUN IMO NIPA AWON AISAN TI ABERE AJESARA LE DENA	
13	Mu idahun ti o ba ibi ti o ti gbo nipa abere ajesara mu	1.Telifison 2. Asoromagbesi 3. Iwe Iroyin 4.Ore 5. Ibadan 6. Aladugbo

3

		7. Idanileko 8. Awon ero miran 8.Ko miran sile.....

EKA B 2- ISE AWON OLUTOJU TI O LE DENA ARUN			
ISE LATI DENA ARUN	Agbo	Abere ajesara	Mejeji pap
14.a. Lati dena arun larin awon omode ewo ni o dara ju?			
Ko awon miran			
b.Ewo ninu awon ti a ko soke yi ni iwo ma n se fun omo tire			
Ise nipa abere ajesara ni awon ile iwe	**Akosile gbogbo igba**	**Akosile eekokan**	**Ko si akos rara**
15. Nje o un so fun awon obi lati mo Pataki abere ajesara?			
16. Fun apere nje o ti e mo bo ya awon omode wa gba abere ajesara dede nipa yiye kadi won ki oto gba won s ile iwe tabi ti won ba ni arun eyi?			
17. Nje e ma n gba awon alabere ajesara laye nibi yi?			
18. Nje e ma n gba awon omo ti oni igbe gburu tabi ofikin laye lati gba abere ajesara?			
IMOTOTO NIPA OWO FIFO			
19. Fifo owo ni kiakia ti o ba de ibi ise ki oto fi owo kan awon omo			
20. Fifo owo ki to ma fun awon omode ni ounje lati ma ie ki won ko aisan			
21. Fifo owo ti o ba ti kuro ni ile igbonse			
22. Fifo owo ti oba ti nu idi omo to doti			
FIFUN OMO LOUNJE			
23.Ewo ni o ma n se ninu ni eyi wonyi ki o to fun omo ni ohunje- ti o ba gbona mo maa n			
1. to wo kin to fun omo			
2. fi sile ki o tutu			
3. Fi enu fe ategun si			
4. Fe ki o tutu			
5. Fi abo ounje ma sinu abo nla ti omi wa			
24. Nje ounje omo lenu kole baaro ki o to fun un			
25. Se awon omode ma njo lo eyi ati sibi larin ara won.			
26.Se e man ro omode lo ounje ti ko ba fe jeun			
OHUNJE JIJE			

Arun igbegburu						
Awon miran						

Idawun si awon ibere yi le je (1-Beeni), (2- Beeko),(3- ni ko mo)

Imo lori nwon fa aru ti ale dekun pelu aberi ajesara	ita	Ikoofe	Romolapa romolese	ipa	gbonfungbonfun	awu
39.Ijiya fun ese awon obi						
40. Kokoro virus						
41.Awon emi okunkun ati aje						
42.Kokoro bacteria						
43.Yiya urun pupo ju						
44.Awon miran (salaye)						
Imo lo itokole awon arun abeere ajesara						
45.isan kiku ati ogbe jinjin didoti le fi aaye gbigboro sile fun arunipara						
46. Piposi arun kogboogun le mu ki arun ikofee ran si						
46.Iko se Pataki lati ayewo ikofee lodo omode						
47.Ewu pe arun eyi le tan kale da ni ile ti a ba ko awon omo wewe papo si						
48.Ategun didara niiyara ikawe le ran titan kale awon arun mimi						

Imo lori awon itokale ati bi ale dekun aru ti a fi aberi ajesara denode	ita	Ikooife	Romolapa romolese	ipa	gbonfungbonfun	av
49. Kiko arun eyi n wa lati ibi ounje jije ati omi mimu to ti ni kokoro igbe						
50. Arun eyi nfa lati ibi je ki efon je eniyan						
51. itankale aisan yi le wa lati imu ati ona ofun, sisin ,iko,le mu ki o ran gbogbo eniyan						
52. Kiko arun yi lewa nipa abere gigun ati awon n ran to ba mu ti won ti ni koko o arun yi						

27. Se awon omo naa n gbe ounje won wa lati ilewa.				
28. Kini e ma n fun awon omo osu kan si osun mefa tie bi ban pa won?				
1.Omi omu ti a ti fun				
2.Awon ounje oyinbo ti o wa ninu agolo				
3.Eko lasan				
4.Omi omu awon ti won toju awon omo naa				
29 Ti idahun re si ibeere oke yi ba je omi omu ti a fun bawo ni e se maa n toju omi omu naa?				
1.Ti toju sinu amohun gbona				
2. Ti toju sinu amohun tutu				
3.Ki o di				
4.Inu fida omo				
5.Omiran ko sile				
30. se o ma n gbe omi omu naa ka na ki e to fun won lo ounje				
Daruko won bi won se un so	Ikini		Ikeji	Iketa
31 Fun awon omo ti ko le mu omu, ounje miran ti a ma n fun won ni				
32 Awon omo osu mefa si odun marun, ounje ti won nje ju ni				
IMOTOTO AGBEGBE				
33. Awon ose oloorun ati nkan miran to ya lati toju awon aga, tabili,ati awon nkan yo ku.				
34. . Se e man lo antiseptic ati awon itoju imototo lati toju awon aga, tabili,ati awon nkan yo ku.				
36.Emelo ni inu kilasi yi nje gbigba pelu ninu loju mo	ekan	emeji	emeta	Ju emeta
37. Nje o n fun omo lagbo ni gbogbo igbati o ba re won				
38. Iru aisan wo lo mu ki e ma ya omo ti a.re koya si oto yato si awon ti ara won ya				
Rirologoroleje				
Ikoife				
Ita				
Arun ipa				
Gbonfun gbonfun				
Awubi				
Apollo				
Arun				

53.Nipa se oju ogbe Awon miran (salaye)					

Iwo nipa ami ati itoju arun abeere ajesara

Fun awon ami meta fun awon arun wonyi

Ita					
Ikooife					
Romolapa romolese					
Arun/ipa					
gbonfungbonfun					
Awubi					

Orishirishi ana Itoju	ita	Ikooife	Romolapa romolese	ipa	gbonfung bonfun	
60. Argu Eyi le dun toju pelu ewe ewuro						
61. ogun igbooga ti arun						
62. Arun Eyi rorun / tabi diun toju pelu epopupa ati emuope						
63.Agbo -						
64.ogun ara ghigbona						