KNOWLEGDE AND PRACTICE OF PLACEMENT OF UNDER-FIVE IN FRONT SEATS OF VEHICLE AMONG PARENTS IN IBADAN NORTH LOCAL GOVERNMENT AREA, OYO STATE

BY

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DEDICATION

This work is dedicated to the Almighty God who ordered my path, showered me with astounding favour and encompassing mercies throughout the period of this program.

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ABSTRACT

The growing trend in the prevalence of Infant Mortality and Morbidity has been associated with placement of children in front seats and non-use of age-appropriate restraint seats in vehicles, especially among Under-5 and children below thirteen years (13yrs) of age. This study, therefore, assessed the knowledge and practice of placement of Under-5 in front seats of vehicles among parents in Ibadan North Local Government Area, Oyo state.

The study was descriptive cross sectional survey that used a two-stage sampling technique to select 270 parents across fifteen (15) selected private nursery and primary schools in Ibadan North Local Government Area, Oyo State. A validated semi-structured questionnaire which contained a 21-point knowledge scale, 10-point perception scale, questions relating to factors influencing practice and the practice of placement of Under-5 in front seats in vehicles among parents was used for data collection. Knowledge scores ≤6, ≥7-13 and ≥14 were classified as poor, fair, and good respectively. Perception scores ≤4 and ≥5 were categorized as unfavourable and favourable respectively. The data were analyzed using descriptive statistics and Chi-square test at P=0.05.

About 62.2% of the respondents were female and most of the respondents 95.2% had tertiary education. Mean knowledge score was 38.9±6.7; respondents with poor, fair and good knowledge of placement of Under-5 in front seats of vehicles were 48.9%, 50.7% and 0.4% respectively. The mean perception score was 6.25±1.64 and 86.3% of the respondents had a favourable perception on dangers of placement of under-5 in front seat and without restraint in vehicles. Majority 88.1% perceived that children are not as safe in the front seats as in the back seats and 78.1% considered child restraints to provide better protection in a crash than adult seatbelt for children. Two-third 66.7% of all the respondents has good practice of placement positions of under-5 in seats of vehicles. Observation carried out in the study shows that 77.0% of the respondents placed their children at the back seat which is at variance with 54.1% reported to have placed their child at the back seat in the vehicle while driving. There are factors that favour placement of under-5 among those with good practice of placement positions and the use of age-appropriate restraint seat. Conversely, a major barrier inhibiting correct placement position of under-5 in the seat of vehicle was child objecting to be placed at the back seat and

also to be restrained (52.2%). Restraint use and placement of under-5 in front seats of vehicles was generally low which was influenced by low knowledge of parents in respect to placement position of under-5 and use of age-appropriate restraint seats in vehicles. Efforts should be directed at elevating the understanding of parents concerning the importance of restraining younger children in the rear seats, alongside the provision of restraints at subsidized rates or preferably free of charge, while encouraging their use through well-planned and adequately resourced extensive public education and enforcement campaigns.

Keywords: Restraint seat, Knowledge, Perception, Practice, Parents, Under-5, Child Safety Laws/Legislation, Mortality, Morbidity, Crashes.

Word counts: 482

CERTIFICATION

I certify that this work was carried out by Diri Nmeri Victoria in the Department of Health Promotion and Education, Faculty of Public Health, College of Medicine, University of Ibadan, Ibadan, Nigeria.

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GLOSSARY OF ABBREVIATIONS

CRDs: Child Restraint Device

CRS: Child Restraint Systems

CDCP: Centre for Disease Control and Prevention

FRSC: Federal Road Safety Commission

HBM: Health Belief Model

IEC: Information Education and Communication

MVA: Motor Vehicle Accident

PSTA: Police and State Transport Agencies

RTCs: Road Traffic Crashes

RTIs: Road Traffic Injuries

WHO:WorldHealthOrganizatio

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

As defined by the Department of Community Child Safety and Disability (2010-2015), a child can be defined as any person under 18years of age. Child safety can also be defined as the ways or strategies of protecting children and younger people who have been harmed or at risk of harm (Department of Community Child Safety and Disability, 2015). Child safety seats (sometimes referred to as an infant safety seat, a child restraint system, a restraining car seat, or ambiguously as car seats) are seats designed to protect children from injury or death during collisions (Elliot, Kallan, Durbin and wilston, 2010). As motor vehicle use increased during the 1950s and 1960s, so did injuries and fatalities resulting from crashes (Melissa, Henley, Kreisfeld and Harrison, 2007). On average, crashes cause about 41,000 deaths each year and millions of non-fatal injuries. Most people believe that these fatalities and injuries happen by chance and cannot be prevented. Individuals and groups that were concerned about safety began to scrutinize motor vehicle design. Some argued that most crashes were the result of driver error, while others felt that the crashes could not be prevented and, therefore, the best way to reduce injuries and fatalities among children and people as a whole was to build more crashworthy cars as well as restraint seats for various age groups (Melissa and Harrison 2002).

Road traffic injuries (RTIs) are the leading cause of deaths among children and young adult in both developed and developing countries, accounting for 22.3% of child fatalities globally. RTIs particularly, are the leading cause of deaths among 15-19-year-olds, the second leading cause death among 5-9-year and 10-14-year-olds, and the ninth leading cause of death among 1-4-year-olds globally (WHO, 2008). In Ghana, over 1900 persons die through road traffic crashes (RTCs) of which 46.4% are vehicle occupants. Children between 0-15 years are the most vulnerable road users, accounting for 20.7% of traffic fatalities annually (Building and Road Research Institute, 2011). The seating positions of children in motor vehicles influence the severity of injury sustained and even death in the event of frontal RTCs. The rear seats have been identified to be the best and safest place for children to ride in a motor vehicle. The risk of rear-seated children dying in a fatal RTC overall is 36% lower compared with children in the front

seats (Elisa, Whitefield and Susan, 1998). Lennona, Siskind and Haworth, (2008) also realized that, in the event of RTCs, the risk of fatality while in the front-seating position more than doubles for children 12 years and younger, with an increase in fatality risk by four-fold for the unrestrained.

Child safety seat provide passive restraints and mist be properly used to be effective (RSA Child safety; 2012). Many child safety restraints in countries such as Canada, United States and even Nigeria are not used properly. To tackle this negative trend, health officials and child safety experts produce safety videos to teach proper car seat installation to parents and caregivers. Other car seats, also known as "booster seats", are required until the child is big enough to use an adult seat belt, this is usually , but not always, when the child is1.45m (4ft 9inch) tall. The child needs to meet five criteria before moving out of the booster seat, including the child's seating position, lap belt position, knee position, and ability to sit properly for the length of the trip. In 2010, the FRSC launched a public enlightenment campaign on the issue but despite this across the country, children are regularly maimed or killed in road accidents (CHOP, 2010). The fatalities happen because parents or guardians fail to adhere to road safety precautions for transporting of children. Many of these deaths and injuries could have been prevented if the children were restrained by baby seats that are suitable for their sizes and weight and are securely fitted. Seatbelts on their own are less effective for children because they are primarily designed for adults. In a crash, a child may slide under an adult belt because the lap strap is too high over their abdomen. It could also cause serious internal injuries. Car accidents, according to reports, are one of the leading causes of required disability like brain injury and paralysis in children.

The national Centre for Statistics and Analysis (NCSA), USA, (2012), reported that approximately 20 per cent of children who die in car accidents annually are killed because they were not strapped in car seats. This means that on any given day nearly 700 children are harmed due to road accidents. Also out of 250,000 kids injured each year, approximately 2,000 die from their injuries, while children make up about 5 per cent of total fatalities in car accidents (National Highway Traffic Safety Administration, 2010). Not only is an unrestrained child in the front seat a potential distraction to a driver but also the failure to use a car seat dramatically increases the chance of child suffering serious injury or death even at the rear seat. Appropriate child restraint

systems are specifically designed to protect infants and young children from injury during a collision or a sudden stop by restraining their movement away from the vehicle structure and distributing the forces of a crash over the strongest parts of the body, with minimum damage to the soft tissues.

The Child restraint is effective safety tools that do not only saves lives, but also significantly reduces the severity of injury that a vehicle occupant may have sustained if they were not wearing the device. Around half of all deaths of front seat occupants could be prevented through the correct positioning of children in vehicles (Lund, 2005). Children are the most vulnerable members of our society and no parent or guardian would knowingly put their child's life in danger. However an astonishing number of parents allow their children to travel unrestrained in front seats in vehicles, placing their lives and safety in peril. Research into child car passenger fatalities in the period 1997 to 2009 reveals that 30% of child fatalities were found not to have been using a child restraint or safety belt (RSA Child Safety Ins 2012). Thus, the use of safety seats and the underlying explanations for placement of children in front seats of vehicles are not well researched in Nigeria. While the call for better legislation and public awareness has gathered momentum internationally, Nigeria appears to be lagging behind the developed countries in terms of addressing the issue of appropriate restraint use for various age groups of children. It becomes therefore pertinent to study the knowledge and practice of placement of Under-5 in front seat of vehicles among parents. This study has therefore been designed with the highlighted objectives.

1.2 Statement of the problem

Motor vehicle crashes are the leading cause of death for children between the ages of 1 and 12 across countries today (CDC 2010). Each year, approximately 1,800 children under age 14 are killed in motor vehicle collisions and more than 280,000 are injured. According to National Highway Traffic Safety Administration (NHTSA) estimates, as many as 30,500 children under age 5 were injured in motor vehicle collisions during 1997. In that same year, 604 passengers under age 5 were killed even though almost 200 of these children were strapped in their safety seats, albeit incorrectly (NHTSA; 2012). As restraint use for children decreases, proper seat placement also suffers. In fact, research indicates that restraint use among children who are front-

seated is lower than among those who are rear seated (48% to 74% front seat restraint use vs. 88% rear seat restraint). (NHTSA 2009b, Durbin et al 2004).Despite the health implications of placement of children in front seats, yet the behaviour remains poorly corrected.

The seating positions of children in motor vehicles influence the severity of injury sustained and even death in the event of frontal road traffic accidents. The rear seats have been identified to be the best and safest place for children to ride in a motor vehicle. The risk of rear-seated children dying in a fatal road traffic accident overall is 36% lower compared with children in the front seats (Elisa, Whitfield and Susan, 1998). Lennona, Siskinda and Hawortha, (2008) also realized that, in the event of road traffic accidents, the risk of fatality while in the front-seating position more than doubles for children 12 years and younger, with an increase in fatality risk by four-fold for the unrestrained. In the year 2000, 539 children younger than 5 years died while riding in motor vehicles; almost half were unrestrained seating in the front seat of the car (National Highway Traffic Safety Administrator, National Centre for Statistic and Analysis. Traffic Safety Facts 2000) and many others were restrained improperly. The proper use of seat belts and child restraints has been identified by World Health Organization (WHO) as one of five key interventions for safer roads.

According to studies conducted in Nigeria, it was found out that observed children restrained were 6.3% (Unilag Project) and 4,1% (Ibadan study), 8.5% (Lagos study), Appropriate restrained for age were 2.4% (Unilag Project), 2.7% (Lagos study) and no data given for Ibadan study while children riding in front passengers seat were 19.7% (Unilag Project), 14.8% (Lagos study) and 25.2% (Ibadan study) (Olufunlayo, Odeyemi, Oginnowo, Onajole and Oyediran, 2012). With rear-seating having such apparent benefits, it's perplexing that more states have not enacted legislation requiring rear-seating of children. In Nigeria, despite the fact there is legislation mandating child safety (FRSC, 2010), placement of children in front seats of vehicles and inappropriate restraint usage is still predominantly practised among parents in the country today (WHO, 2011) .

The risk taking behaviours in respect to placement of children car front seats are major and common problems, yet it remains poorly understood and is rarely taken in to consideration when

assessing children's health and life experiences. There are safety laws that exist on the books, but were not being strictly enforced. A few years ago, the Federal Road Safety Service Commission (FRSC) in Nigeria decided to enforce compliance with these laws. They started with the seat belt laws (Circa 2004), then the crash helmet laws (Circa 2008) and the child safety laws (2010). However, whilst the police and State Transport Agencies (PSTA) backed the FRSC in enforcing the seat belt and crash helmet laws, nothing had been done by them regarding the child safety laws (which might explain why there are not much awareness/compliance with the child safety laws as there is with the seat belt and crash helmet laws. The aim of this study among others is to assess the level of knowledge of seating positions in vehicles as well as assess the level of restraint use for children while driving. This study will provide a snapshot of the level of child safety delivery in Ibadan North Local Government Area of Oyo State.

1.3 Justification of the study

Review from literatures has shown that only three studies has been conducted in Nigeria so far as regards placement of under-5 in front seats of vehicles of which much was not done as regards this issue. The three studies conducted were based on the need assessment and general observations on placement of under-5 in front seats of vehicles. The studies include those conducted in University of Lagos, Ibadan and also within the environs of Lagos. Study on knowledge and practice of placement of under-5 vehicle seats has not really been conducted in Nigeria, Specifically in Ibadan. However, conducting this study will contribute to the growing literature on placement of under-5 in front seat of vehicles since there is a dearth of studies examining placement position in vehicle seats among parents of under-5 enrolled in various private nursery and primary schools in Nigeria and also add value to the field of health promotion and education on placement position of children in vehicle seats which will also serve as a point of reference for future researchers who wish to conduct further research work in this field.

The dearth of knowledge as a result of little work done on this phenomenon will be bridged and information will be provided to law enforcement agencies especially the Federal Road Service Commission (FRSC) to enhance their understanding of this phenomenon. The study will provide base line information on both the observed and reported practices of placement positions of

under-5 in vehicle seats and the discordance between them. The findings of this study will be used by the government to make and enforce polices and also provide further justification for parents and public enlightment on the correct placement position of under-5 and use of age-appropriate restraint seats in vehicles. This study thus becomes highly imperative because it will provide information among parents on their knowledge and practice in ensuring correct placement position of under-5 in vehicle seats in some selected private nursery and primary schools in Ibadan North Local Government in Oyo State.

1.4 Research questions

1. What do parents driving children to crèche and kindergarten schools in Ibadan North Local Government Area, Oyo State know about correct child placement and use of appropriate safety -seat restraint system children in their vehicles?
2. What do the parents perceive as dangers or consequences of placing under-5 in front seats or without restraint seats in vehicles?
3. What are the various practices of the parents in respect of correct child placement and use of appropriate safety restraints in placing of under-5 in seat of vehicles among the parents?
4. What factors promote or hinder parents in adhering to correct child placement and use of age-- appropriate safety restraint system in vehicles?

1.5 Objectives

General objective

To investigate the knowledge and practice of placement of under-5 in front seats of vehicles among parents in Ibadan North Local Government Area, Oyo State.

Specific objective

1. To assess the parents' knowledge of correct seat placement position and age-appropriate restraints for under -5 in vehicles
2. To explore parents' perception on dangers or consequences of placing under-5 in front seats and without restraint in vehicles

3. To assess practices of the parents in respect to correct placement and use of age appropriate safety restraint device for under-5 in vehicles
4. To identify the perceived factors promoting or hindering parents to adhere to correct child placement and use of appropriate safety restraints

1.6 Research hypothesis

The study tested the following null hypothesis:

1. There is no significant association between knowledge of Under-5 placement in vehicle seats and age-appropriate restraint use and parents' socio demographic variables (parents' sex, parity, religion, level of education, occupation, number of children)
2. There is no significant association between knowledge of under-5 placement in vehicle seats and age-appropriate restraint use and parents' perceived dangers of not using child restraint devices and correct placement position of Under-5 in vehicles
3. There is no significant association between parents' knowledge of Under-5 age-appropriate restraint system use in vehicles and placement practices
4. There is no significant association between parents' perceived dangers of not using child restraint devices and correct placement position of Under-5 in vehicles and placement practices

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Annually, over 1.2 million people die prematurely and up to 50 million sustain non-fatal injuries through road traffic crashes (World Health Organization, 2013). Low-and-middle income countries are mostly affected. Approximately 91% of the world's traffic fatalities occurs in low-and-middle income countries, which account for 72% of the world's population, but have only a little over one-half of the world's registered vehicle population. This indicates that, low-and middle countries bear a disproportionately high burden of road traffic fatalities relative to their level of motorization (WHO, 2014). Occupants of motor vehicle constitute a significant proportion of global road traffic fatalities. Approximately 31% of the world's traffic fatalities are vehicle occupants. The situation in Africa as regards vehicle fatality is dreary. In Africa, approximately 43% of traffic fatalities are vehicle occupants, which exceed the global average (WHO, 2013).

The leading cause of death from unintentional injury for children and adolescents age 0-17 is involvement in a motor vehicle crash (Centres for Disease Control and Prevention, 2007). Fatalities are highest for children as passengers at 33% of the total motor vehicle fatalities. On average approximately 218 children age 0-9 were hospitalized in trauma units in 2008-2009 due to injuries as passengers in a motor vehicle crash (Howard, 2002). Child safety seats (sometimes referred to as an infant safety seat, a child restraint system, a restraining car seat, or ambiguously as car seats) are seats designed to protect children from injury or death during collisions. Child safety seats may be integrated by automobile manufacturers directly into their vehicles design. Most commonly, these seats are purchased and installed by consumers. Many regions require children defined by age, weight, and/or height to use a government-approved child safety seat when riding in a vehicle.

2.2 Types of Child Seats

According to Road Safety Authority (2012) a properly fitted child restraint keeps the child in their seat, preventing them from being thrown about inside or ejected from the vehicle. It also

absorbs some of the impact force. This means that your child is much less likely to be killed or injured in a crash.

2.2.1 Child Restraint Devices (CRDs)

There are four main types of CRDs, suitable for children of different sizes of which are infant capsules, convertible seats (converts from a rear-facing seats of infants to a forward-facing seat), dedicated forward-facing child restraint and booster seats. (National Highway Traffic Safety Administration, 2002). Each of the CRSs types are outlined below:

- **Infant Capsules**

Infant capsules are designed for children from birth to approximately six (6) months of age (or less than 9kg and /or less than 70cm). They are typically one-piece, protective moulded shells. They are designed for rear-facing installation only. The capsule is designed so that in the event of a crash, impact forces will be evenly distributed over the infant's back with minimal vibration to the vulnerable head and neck area.

- **Convertible Seats**

Convertible seats incorporate features to allow use by infants as well as toddlers. In the rearward-facing position, the convertible seat is usually from birth to approximately six (6) months of age (or less than 9kg and/or less than 70cm). As with infant capsule, the purpose of the harness system in the rearward-facing convertible seat is designed so that in the event of a crash, impact forces will be evenly distributed over the infant's back with minimal vibration to the vulnerable head and neck area. In the forward-facing position, the convertible seat carries the child from approximately six (6) months to 4years (or between 8 to 18kg and / or 70 to 100cm). This seating position is used when the child is able to sit and easily able to hold his or her head upright.

- **Forward-Facing Seats**

Forward-facing seats are used to carry children from approximately six (6) months to 4years (or between 8 to 18kg and / or 70 to 100cm). Like the convertible CRDs used in the forward-facing model, dedicated forward-facing child seats should also be used when the child is able to sit and easily able to hold his or her head upright. The restraint uses five-point harness. For these seats, the heights of the shoulder strap is usually above the child's shoulder to effectively limit head

collision and the height of the seat back should be above the child's ear in order to provide adequate head protection in the event of a crash.

- **Booster Seats**

Booster seats are designed for children approximately aged between 4years and 10 years (or for children between the height of 100 and 400cm). Booster seats are used when the child has outgrown a forward-facing child seats or when they are still too small for a seat belt. The booster seats ensure that the lap or shoulder seat belt is positioned correctly across the child's shoulder and hips. It also raises the child so that they can see out of the window and so their knees bend comfortably. There are two types of booster seats: belt positioning ('booster cushion') and high-black belt positioning ('booster seat'). In assessing the range of children who would benefit from booster seats, height is a better indicator than age or weight because it governs the positioning of the lap or shoulder seatbelt across the child's shoulder and hips (NHTSA, 2001).

2.3 Benefits of Correct Placement Position and Effectiveness of Age-appropriate Restraint Use in Vehicles

Recent estimates of Child Restraint Device (CRDs) effectiveness have suggested that overall; Child Restraint Systems (CRSs) may reduce injury by approximately 70 per cent compared with unrestrained children (Mackay, 2001; Webb, Bowman, (2000). For example, an in-depth study of Australian fatal crashes involving child occupants, Henderson (1994) reported a 26 per cent reduction in injuries for those restrained in CRDs over a two or three point sate belt. In US, Durbin, Chen, Elliot and Winston, (2001) found a 60 per cent reduction in risk of injury overall for those restrained in a child seat over those in seat belt restraints, and a 70 per cent reduction in risk of a head injury. Bohman, Bostrom, Olsson and Haland, (2006) illustrated using crash tested the benefits of restraint seat and correct placement position in the vehicle of which a greater percentage of infant mortality will be reduced. Frontal impact airbags may not be designed for children and children are thus recommended not to be exposed to frontal impact airbags. This can be achieved either by disconnecting the passenger frontal airbag where the child is sitting in the front passenger seat or to keep the child out of the front seats (Anderson, Bohman and Osvalder, 2012).

Age- appropriate restraint confers relatively more safety benefit than rear seating but the two works hand in hand to provide the best protection for children in crashes. This evidence support the current focus on age-appropriate restraint in recently upgraded state child restraint laws. However, it is of utmost important to note that considerable added benefit would be realized with additional requirements for rear-seating (Durbin, Chen, Smith, Elliot and Winston, 2005).

2.4 Knowledge on Correct Placement Position and Age-appropriate Restraint Use in Vehicles

Research from low and middle income countries shows low reported use, incorrect use and lack of knowledge of child safety restraints. For example, in a study of knowledge and attitudes in Turkey, only 20% of parents reported using a car safety seat, with just 10% actually reporting correct use. Moreover, a significant number of respondents, 28%, reported not knowing what a car seat was (Oztora, 2009). A study of parental knowledge in Israel also showed a high rate of misuse/misinformation, with 64% of parents surveyed responding incorrectly to questions about proper car seat use, 65% not knowing what a car seat was and 54% not knowing that the proper place for it was in the back seat. In the same study, 60% of infants and 38% of toddlers were reported to be restrained incorrectly (Hemmo-Lotem, Urkin, Endy-Findling and Merrick, 2006). Patterns of low child restraint use have been reported in numerous countries, including Oman, China and Nigeria (Olufunlay et al., 2011; McIlvenny, Al Mahrouqi, Busaidi, Nabhani, Al Hikmani and Al Kharousi, 2004; Purc-Stephenson, Ren and Snowdon, 2010).

A primary method to prevent injuries to children as passengers in vehicles is appropriate use of occupant restraints according to the age, weight and height of the child (Thomas, Tonya and Geller, 2000). Studies in Europe, United States and even Nigeria have shown that use of a safety child seat is preferable to no restraint at all; however the use of a child restraint system (CRS) significantly reduces injuries among child passengers (NHTSA 2009; Durbin et al., 2005). Child safety seats reduce fatalities among infants (71%) and toddlers (54%). Child safety seats have been proven to reduce serious injuries among children age 4-7 (59%) in comparison to safety belts alone. Because of this, much attention is given to properly restraining children within vehicles (Elliot, Kallan, Durbin and Winston, (2006) as correct placement position of children in vehicles suffers.

2.5 Perceptions of Parents as Regards Motor Vehicle Crash

Despite past efforts, motor vehicle crashes continue to be a major cause of death and injury for children of all age group. Some parents and caregivers feel immune "It won't happen to my child" or remain uninformed to the extent of motor vehicle injuries among children "I didn't know that". The statistics, however, tell a different story. Children are especially vulnerable to injury during a crash due to their body structure, composition and fragile musculature and bones, which are soft and still developing. Injury to the head has been identified as a primary cause of death for children riding unrestrained or improperly restrained. Non-fatal crashes can also be devastating to children and families, resulting in serious injury (including head injuries), emotional trauma, painful bruises and broken bones, and life-long disabilities that may include diminished mental capacity and paralysis (Child Safety Restraint Study, 1998).

2.6 Children's Position during Vehicle Rides and Type of Restraint Seat Use

The low restraint use among children in Sekondi-Takoradi Metropolis (STM), the regional capital of the Western Region of Ghana is not a phenomenon exclusive to Ghana, but other African countries are equally grappling with exact same safety challenge (Solomon, 2014). For instance, roadside observational surveys realized child restraint use rate of 4.1% in the Ibadan Metropolis, in Nigeria (Sangowawa, Ekanem, Alagh, Ebong, Faseru, Uchendu and Fajola, (2006), and use rate of 8.8% in Bloemfontein, South Africa (Hallbauer, Joubert, Ahmed, Brett, Dawadi and Kruger, 2011). The low usage of restraints among children on the continent may be due to poor enforcement regime. Laxity in enforcement has been observed as one of the key factors militating against the success of traffic safety regulations in most developing countries. There is mounting evidence that, it is safer for children to ride in a motor vehicle correctly restrained in the rear seating position. In light of this, it is very worrying that, only 1 in 15 of the children observed in the STM was restrained, and approximately 1 in 4 was riding in the front seating position (Solomom, 2014).

Naturalistic driving studies where cameras are installed in vehicles have become a common method to analyse driver behaviour during normal driving. Some driving studies of children have been conducted, and it has been shown that children sit differently compared to standard seating procedures of crash test dummies (Katarina, 2013). Data from National Highway Traffic

Administration's (NHTSA) Motor Vehicle Occupant Safety Survey 1996 indicated that many children are being shifted from child safety seats to seat belts prematurely, before their bodies are large enough for the seat belts to fit them properly (Thomas, 2000). Improper fit can lead to injuries in the event of motor vehicle crashes. Although the most severe injuries are usually head injuries, restrained older children are more likely to have abdominal or pelvic injuries. Children who are too large for child safety seats are often restrained improperly or not at all. For this reason, the correct use of occupant protection for children aged 0- 5 in particular need to be addressed.

According to studies conducted in Nigeria, it was found out that observed children restrained were 6.3% (Unilag Project) and 4,1% (Ibadan study), 8.5% (Lagos study), Appropriate restrained for age were 2.4% (Unilag Project), 2.7% (Lagos study) and no data given for Ibadan study while children riding in front passengers seat were 19.7% (Unilag Project), 14.8% (Lagos study) and 25.2% (Ibadan study) (Olufunlayo, 2012). The use and misuse of car seats was explored by Jean, (2010) in children younger than age 4years. A cross-sectional design was used. They observed 717 child passengers and 661 drivers that entered parking lots of fast food restaurants in southeast Michigan and recorded how the children were restrained. Fifty-five percent of the children were restrained in a car seat, but of that, only 37% were correctly restrained. Twenty-five percent were not restrained at all. The investigators found that the best indicator that a child would be placed in a CRD was that the adult was wearing a seat belt (Jean, 2010). . Efforts should be directed at elevating restraint use among child passengers, as well as moving them to the rear seating position

2.7 Factors Affecting Adherence to Back Placement of Children and Use of Age-Appropriate Restraint Seat in Vehicles

Reasons for using restraint seats, as identified by parents, include safety of the child in the case of an accident, protection from injury during sudden stops, prevention of the child from distracting the driver, and for comfort and better viewing of the outside for the child (Gallina, Rivara, Bennett, Crispin, Kruger, Ebel and Sarewitz, 2010). Many parents refrain from using a restraint seat because they believe their child is too big to use it. Some have not heard of restraint seats, while others identified child resistance because of embarrassment or discomfort as a

barrier against using child safety seats (Gallina etal; 2010). Due to an inconsistent delivery of information about child safety seats, many parents do not know about restraint seats for children or where it is safe to place their children in vehicles while driving. (Gallina etal; 2010). Other reasons for not using restraint seats include the seat taking up too much space in the car and too much consumption of time and effort to properly install it in the car. When transferring the seat to another vehicle, parents often complain of it being too difficult to move and install. Many mothers believed that the installation was too complicated and had doubts as to whether the seat was in-stalled correctly (Amanda, Ejere, Hazen, Emusu, King and Osberg, 2010).

There are certain dispositional and contextual factors influencing the use of child restraints. By dispositions, we mean those characteristics that are peculiar to the drivers such as age, education, gender etc; while contextual/ situational variables may be the type of car, location where driving, time of the day etc. Findings on the link between certain demographics and child restraint use are pretty consistent. Correct use of car seats has been associated with female gender, higher level of education and individuals who reported that obtaining information about the correct use of child safety seats was difficult (Snowdon, Hussein and Ahmed, (2008), perhaps an indication that having to search for the information made caregivers or drivers more committed to using the seats. A study conducted in China found that a mother being more educated increased the likelihood that her child would be seated optimally in the vehicle (Pan, Du, Jiang, Bilston, Brown and Shen, 2012).

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Low income and education levels have been correlated with low rates of child restraint use in the U.S., highlighting the possible need for awareness and car seat subsidies to promote use (Winston, Chen, Smith and Elliott, 2006). Other research has also pointed out that child restraint use is lower: among older children; when there are more occupants in the car; in older vehicles, pickup trucks and vans; with young drivers or those older than 60; and in rural areas (Agran, Anderson and Winn, 1998). Parent car owners' willingness to pay for child safety seats is another key variable in understanding child restraint use. Investigators in Iran found the mean willingness to pay amount parents reported was only $15USD, while more than 85% of respondents reported not being willing to pay the actual market price for a car seat which was significantly higher than $15USD (Jarahi, Karbakhsh and Rashidian, 2011). Family income was

the primary predictor of willingness to pay and was also associated with attitudes about the usefulness of car seats, again underscoring the need for free or subsidized safety seats to increase use (Jarahi et al, 2011).

It is not always that children are front-seated due to the lack of a free seat in the rear of the vehicle. In fact, studies have shown that approximately 80% of vehicles where children are front-seated have at least one available seat in the rear of the vehicle (Segui-Gomez, Glass and Graham, 1998; Lennon and Alexia, 2005). Lennon and Alexia, (2007) found that parents were right to cite several reasons for having their children front-seated including age and size of child, behaviour of child, inconsistency with other adult caregivers, peer pressure from child's friends, and lack of clear legislation and enforcement. Understanding parental perceptions of the risks associated with seating children in the front seat of a vehicle can provide insight to designing interventions to reduce that risk (Will and Geller, 2004).

2.8 Causes of Injury to Unrestrained Children

Child seating positions in a motor vehicle has attracted the attention of road safety professionals and other stakeholder institutions in recent times, particularly for motor vehicles equipped with air bags. Air bags, though, effectively protect adult occupants they are unsafe for child passengers, because of their disastrous effect during a road traffic crash. Children's Hospital of Philadelphia (CHOP) conducted a research which revealed that children exposed to air bags during a road traffic crash are twice as likely to suffer a serious injury (Children's Hospital of Philadelphia, 2014). Studies have reported that restrained rear-seated children are offered superior occupant protection compared with restrained front-seated children (Zhu, Cummings, Chu, and Cook, 2007; Elisa, Whitefield and Susan, 1998).

In a study to determine the effects of seating position, combined with restraint use on children's risk of dying in crashes, rear seated children had 35% reduction in risk of dying in vehicles without any airbags, 31% in vehicles equipped only with driver airbags, and 46% in vehicles with passenger airbags compared with children restrained in the front seat (Elisa et al., 1998). Injury to an unrestrained child occurs a split second after a motor vehicle crash occurs, through a series of three individual events, called collisions. These collisions include: 1) the vehicle

crashing into an object; 2) the unrestrained child colliding into some part of the vehicle's interior; and 3) the child's internal organs being propelled into other internal body parts.
The laws of physics predict that all three collisions will occur at approximately the same speed because energy is never lost; it only changes form. In other words, the energy will be transferred from the vehicle to the child colliding with the vehicles interior, and then to the child's internal organs (National Centre for Injury Prevention and Control, 1998).More recent studies have also shown that the head is the most commonly injured body region for severe acute injuries, regardless of restraint system and crash direction (Katarina, 2013). Traumatic brain injuries are the leading cause of death among children (0-16) in motor vehicle crashes (Carlsson, Harris and Olukoga, 2013). A study of 4-7-year-old children on belt positioning boosters reported no abdominal injuries whatsoever in frontal crashes (Katarina, 2013).

According to US statistics, the fatality risk in children aged 0 to 7 is higher in rollover and side impacts, but due to the high frequency of frontal impacts they accounted for 35% of all fatalities, while side impacts accounted for 26% and rollover 29% of all fatalities (Katarina, 2013). In Sweden, from 1992 to 2011, 33% of all child fatalities in ages 0 to 14 were in frontal impacts, 27% were side impacts and 29% were rollovers (Carlsson et al, 2013). The same conclusions were drawn when focusing on non-fatally injured children in car crashes, where frontal crashes are the most frequent although the injury risk is lower compared to side impacts and rollovers (Densu, 2013). Overall, the head should be protected in motor vehicle crashes to reduce the number of fatalities and severely injured children. Like measles or mumps, however, most motor vehicle-related injuries to children can be prevented. As with many childhood diseases, prevention of motor vehicle injury cannot be achieved through the use of a vaccine. This powerful injury prevention vaccine is a child car seat.

The low restraint use and riding in unsanctioned seating positions predisposes children to traffic injuries in the event of a crash. The risk of fatality for unrestrained child passengers increases by four-fold during crashes (Lennona *et al.*, 2008). According to Ghana's seat belt law (Act 683, 2004), motorists or parents have the legal responsibility to ensure that children under 5 years are correctly secured using the age-appropriate restraints in the rear seats, while those older than 5

years of age should be appropriately restrained in any seating position, while riding in a motor vehicle (Solomon, 2014).

Of the 1,008 children aged 12 and younger involved in fatal motor vehicle crashes in the United States in 2006, 21% were front-seated (NHTSA 2008a). Of the 61 children aged 12 or younger killed in motor vehicle crashes in North Dakota between 2004 and 2008, 14 or approximately 23% were front-seated (NHTSA 2010). Of those were who were front-seated, 57% were unrestrained, as compared to only 17% of those who were rear-seated. It is possible that some of these deaths could have been prevented by properly restraining the children in the back seat of the vehicle (Road Transport Safety Security Centre, 2011).Car seats have been found to be highly effective in preventing motor vehicle-related injury during a crash. Car seats work by 1) anchoring the child and restricting his/her movement during a crash, and 2) helping to absorb and minimize the impact from a crash.

The consequences of failing to use age- and weight-appropriate child safety seats are well known to many health care professionals (WHO, 2012). Nonetheless, at safety seat "check-ups," child passenger safety experts frequently find that up to 95% of car seats are improperly used by caregivers. To keep a child safe in a moving vehicle, caregivers need to choose the right safety seat, install the seat correctly in the right location of the vehicle, strap the child in properly and use the seat without fail. There is no doubt that proper child safety seat use is a complicated issue. However, knowing the best available seat types and how they should be installed for children of various ages and weights will enable the paediatric health care provider to give proper guidance to families who wish their children to ride safely. Moreover, identifying dangerous patterns of child safety seat misuse during routine well child visits can help families' correct errors before there is a disaster (Michelle, Amanda, Jamekin, Habibullah and Natasha 2010). Children secured in the rear seats with age-appropriate restraints are thus offered the best protection while travelling in a vehicle.

2.9 Guidelines for Proper Seat Use

A major factor contributing to the misuse of child safety seats is the lack of standardization among vehicle restraint systems and the vast array of seats currently available on the market.

More than a dozen manufacturers produce more than 60different models of safety seats with different design attributes to provide protection for infants and young children at different ages and sizes (Michelle et al, 2010). This variability necessitates unique instructions for each seat, which caregivers must read thoroughly. In addition, not all safety seats and vehicle restraint systems are well-matched for one another, which means the "fitness" of a specific seat when paired with a specific vehicle must be assessed on a case-by-case basis. Caregivers cannot assume all seats will fit properly in their vehicles when changing from an infant-only seat to a seat for older children, or when borrowing a child safety seat from a relative or friend. Since misconceptions abound, it is important that paediatric health care providers be familiar with the basic guidelines regarding proper child safety seat use (Michelle et al, 2010). According to NHTSA, (2010) various guidelines were looked into of which a suitable one was then recommended for use by families. Below are the recommended guidelines:

Table 2.1: Guidelines for Car Child Safety Seats and Seating Position in the Vehicle

Age	Type of Seat	Position in the vehicle	General Guideline
Infants	Infant seats and rear-facing convertible seats	Middle of the back seat	All infants should always ride rear-facing until they are at least 1 year of age
Toddlers/Preschoolers	Convertible seats	Middle of the back seat	It is best to ride rear-facing as long as possible. Children 1 year of age can ride forward-facing
School-aged children	Booster seats	Middle of the back seat	Booster seats are for older children who have outgrown their forward-facing car safety seats. Children should stay in a booster seat until adult belt fits correctly (usually when a child is between 8 and 12 years of age
Older children	Seat belts	Middle of the back seat	Children who have outgrown their booster seats should ride in a lap and shoulder belt in the back seat until 13 years of age

Source: Car Safety Seats (A Guide for Families) (2009 American Academy of Pediatrics)

2.10 Theoretical Frame-Work

2.10.1 Health Belief Model

The Health construct to be used is the Health Belief Model based on Polit and Beck, (2010). The Health Belief Model (HBM) addresses the individual's perceptions of the threat posed by a health problem (susceptibility, severity), the benefits of avoiding the threat, and factors influencing the decision to act (barriers, cues to action, and self-efficacy). The Health Belief Model (HBM) was one of the first theories of health behaviour, and remains one of the most widely recognized in the field. It was developed in the 1950s by a group of U.S. Public Health Service social psychologists who wanted to explain why so few people were participating in programs to prevent and detect disease. Their focus was on increasing the use of then-available preventive services, such as chest x-rays for tuberculosis screening and immunizations such as flu vaccines. They assumed that people feared diseases, and that health actions were motivated in relation to the degree of fear (perceived threat) and expected fear-reduction potential of actions, as long as that potential outweighed practical and psychological obstacles to taking action (net benefits).In ensuing years, researchers expanded upon this theory, eventually concluding that six main constructs influence people's decisions about whether to take action to prevent, screen for, and control illness.

Perceived Susceptibility: This refers to ones chance of getting a condition. It looks at the participants beliefs about what would happen if they did not take precautions or medications. It is one of the more powerful perceptions in prompting people to adopt healthier behaviours. The greater the perceived risk, the greater the likelihood of engaging in behaviours that will decrease the risk.

Perceived Severity: Perceived seriousness of a given health condition also operates at the psychological level and is demonstrated though an individual's attitude or behaviour. The severity can be measured by the outcome of a disease in an individual's life and how he/she is responding to the outcome in his/her life. The outcome can be shown in two ways; denial or acceptance of the susceptibility.

Perceived Threat: The recognition of the susceptibility of the disease to occur, and the acceptance of its severity are more likely to pose a health threat to an individual and force him/her to adopt a health behaviour.

Perceived Benefits: This refers to a person's opinion of the value or usefulness of a new behaviour in decreasing the risk of developing a disease. People tend to adopt healthier behaviours when they believe the new behaviour will decrease their chances of developing a disease.

Perceived Barriers: This is one's tangible and psychological costs of the advised action. It is also an individual's own evaluation of the obstacles in the way of him/her adopting a new behaviour.

Cues to action: are strategies, events, people or things that move people to change their behaviour. The HBM suggests that with enough susceptibility and severity of a health threat, and with a perceived benefit of the health action, sometimes a cue acts as a trigger to take the recommended health action.

Self Efficacy: This refers to the confidence in one's ability to take action towards health.

2.10.2 Application of Health Belief Model to Knowledge and Practice of Placement of Under-5 in Front Seats of Vehicles among Parents

The HBM was used as the foundational framework for this project. The HBM has been used to study child safety in vehicles in an early observational and questionnaire study in New South Whales (NSW). This study is similar to the current study and this was used to investigate parental restraint practices and parental beliefs about child restraint use using the HBM (Mellisa 2013). Constructs of the model in previous studies explored parental perceptions of the susceptibility of children to being injured in a crash, the perceived severity of the child's potential injuries, the perceived barriers and benefits to using appropriate child restraint practices, and parental self-efficacy in completing certain tasks regarding appropriate child restraint practices, such as correctly installing a child restraint and making a child use a child restraint. Parents who restrained their children in a child restraint were more likely than other parents to believe they could afford a child restraint. In addition, they were less likely to believe that using a child restraint was 'a nuisance', or that they would have difficulties installing the child restraint, or that child restraints were not necessary on short trips. Parents who restrained their children using a child restraint were more likely to believe that use of child restraints provides safety for children involved in a crash. Further, parents who used child restraints for

their children were more likely than other parents to believe they could prevent injury to their child in a crash and that luck did not determine whether their children would be in a crash (Mellisa, 2013).

Katarina (2013) described the perceived susceptibility as the individual's subjective perception of the possibility of contracting a health condition. This perception "has been found to be positively related to the taking of a wide variety of preventive health actions (Katarina, 2013). The parent's perception of a motor vehicle accident (MVA) occurring while the child is riding in a vehicle would increase the chance that the child would be properly restrained.

Perceived seriousness was defined as "feelings concerning the seriousness of contracting an illness or of leaving it untreated (and) included evaluations of both medical and clinical consequences and possible social consequences" (Katarina, 2013). The parent's perception of the child sustaining more serious injuries from a MVA if riding unrestrained might influence the parent to restrain the child. Having social consequences like child neglect charges or fines for an unrestrained child might influence the parent's perception of the seriousness of leaving a child unrestrained. If the parent perceives the susceptibility of a MVA and the seriousness of injuries to the child, the benefit would be to protect the child from injury. This benefit is best achieved by proper restraint use for the child.

The perceived barriers could influence the individual's health related behaviours negatively. Katarina, (2013) stated that monetary cost was one of the largest factors negatively affecting behaviour. In a previous study the barriers to using child restraint devices (CRDs)included the cost of the seat, the difficulty of use, the child's objection to the CRDs having to use one car seat for two vehicles, and the extra time involved in securing the child in the CRDs (WHO, 2013). The parental perceived susceptibility and perceived seriousness together are the parental perceived threat. The modifying factors are the variables and the cues to action, which both influence the parental perceived threat.

The parental perceived threat along with the benefits of restraining the child minus the barriers of restraining the child leads to the likelihood of action. In the best scenario, the action would be

that the child is properly restrained at all times. The variables include demographic, sociopsychologic, and structural data. The demographic variables are the parent's age, gender, marital status, race, and income; and the child's age and weight. The young mothers of a study explained that infants needed more protection than toddlers (WHO, 2013). The mothers also indicated infants were restrained more often because they did not complain about being in a car seat. Sociopsychologic factors include the parent's personality, the child's temperament, the laws, and societal norms.

The perceived comfort of the car seat, the belief that societal norms supported car restraint device (CRD) use, and the fact that the parent was the driver of the vehicle in which child was riding increased the chance that the child was secured properly in a CRD (Mannix, Fleegler and Meehan, 2012). The structural variables are the parent's CRD knowledge and prior experience with CRDs. Many of the young mothers studied stated they did not realize that CRD misuse was as high as 70-90% and this information would encourage them to double check their restraint techniques (WHO, 2013).The modifying factors also include cues to action which could be advice from health care providers, television talk shows, recent news events, magazines, pamphlets, newspaper articles and mass media campaigns. Many studies indicated that the paediatrician's office was a good place for parents to learn about injury prevention methods (Katarina, 2013).

Thus the constructs of importance in this study are on the following areas:

1. the severity of a potential event or incident which has negative health implication
2. the child's susceptibility to that incident,
3. the benefits of taking a preventive action, and
4. the barriers to taking that action
5. Cues to action

Perceived susceptibility: The belief that placement of under-5 in front seats of vehicle are becoming rampant; that placement of under-5 in the rear seat and use of age-appropriate restraint reduces the risk of being injured and decreasing mortality rates. The belief that placement of under-5 in the rear seat and use of age-appropriate restraint promotes health by decreasing infant mortality rates; if the parents do not see the risk of exposing their children to danger by placing them in front seats or can't see any importance of age-appropriate restraint use.

Perceived severity: Belief that placement of children in front seats can cause various type of injury and even death and put them at risk of not living long to attain their desired age. Belief that non-usage of age-appropriate restraint seat can hinder an individual from doing certain things due to the danger it later poses or restricts an individual. Such belief can influence their decision to start practicing correct placement position of children and age-appropriate restraint use in vehicles while driving.

Perceived benefits: Belief that placement of children at the rear seats in the vehicle will promote their health by reducing the rate of mortality and morbidity and giving them quality life. The beliefs that use of age-appropriate restraint seats will reduce the susceptibility and severity to be exposed to high risk of mortality and morbidity. If they believe this, it can influence their decision in practising and purchasing of restraints seats.

Perceived barriers: the barriers could be factors such as availability of restraint seats in the market, affordable prices of the restraint seats, creation of awareness of correct placement position and use of age-appropriate restraint and lack of law enforcement on correct placement position and use of restraint seats. If the perceived barriers outweigh the benefits, this could make them not to practise correct placement position and age-appropriate restraint use in vehicles.

Cues to action: Factors that can prompt them to practice correct placement position and use of age-appropriate restraint may include Experiences of children, under-5 especially not restrained in a vehicle crash or placed in the front seat, increased death rate, advice from health care providers, preventive health education, television talk shows

Self-efficacy: Confidence in ability to successfully perform the action. This is the confidence that an individual have to correctly place his or her child and use age-appropriate restraint seat in vehicle while driving.

All the above was applied to this study as shown in figure 2.1 below

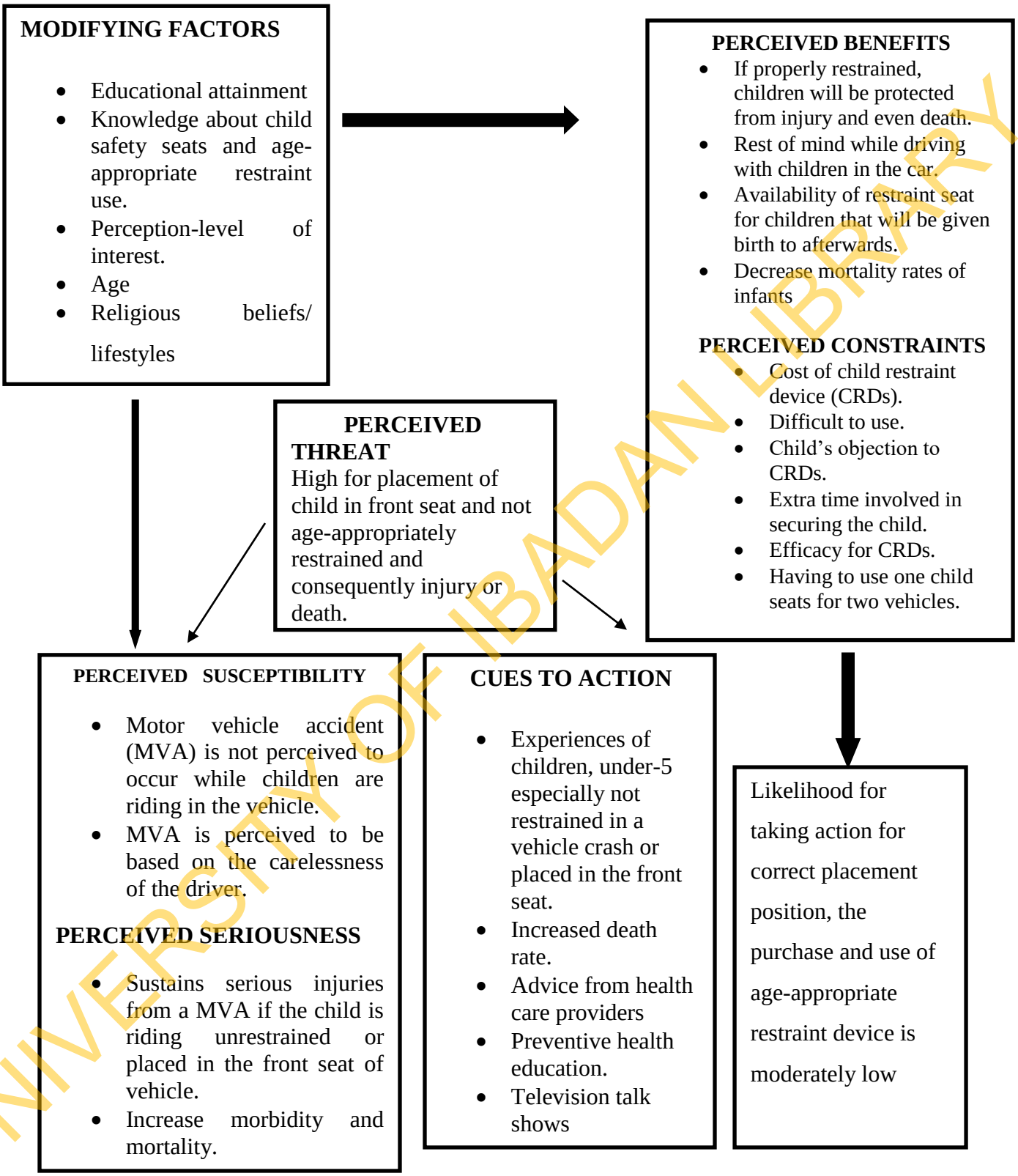

Figure 2.1: Application of Health Belief Model on Knowledge and Practice of Placement of Under-5 in Front Seats of Vehicles

CHAPTER THREE

METHODOLOGY

This chapter explains the description of the study area and describes the research design. The other component of the methodology includes the study design and scope, study area, study population, sample size determination and sampling technique, methods and instrument for data collection, validity and reliability, data collection, validity and reliability, data collection process, data management and analysis, ethical consideration and limitations of the study.

3.1 Study Design and Scope

A descriptive cross sectional study was adopted for use in the collection of information to investigate the knowledge and practice of placement of under-5 in front seats of vehicles among parents in Ibadan North Local Government Area, Oyo. The scope of the research was limited to gathering data from parents who had under-5 admitted in the various private nursery schools that was selected for the study within the local government area.

3.2 Study variables

Independent Variables

The independent variables are the social demographic characteristics of the parents which includes parents' sex, parity (number of children blessed with), religion, level of education, occupation, religion, ethnic group, age of the parent, number of children and class of child.

Dependent Variables

The dependent variables are the knowledge and practices of placement of under-5 in vehicle seats among parents in Ibadan North Local Government.

3.3 Description of study location

The study was carried out among parents of under-5 admitted, in the selected private nursery and primary schools in Ibadan North Local Government Area, Oyo state. Ibadan North Local Government is one of the Local Government in Oyo State and was created by the Federal Military Government of Nigeria on 27th septembrer, 1991. This Local Government was carved

out of the defunt Ibadan Municipal Government along with others. The components of the Local Government cover area between Beere roundabout through Oke-Are to Mokola, Oke itunu and Ijokodo. The other components area between Beere round about to Gate, Idi-Ape to Bashorun and up to Lagos/Ibadan expressway, Secretariat, Bodija, University of Ibadan and Agbowo areas.The secretariat of the Local Government is presently and temporarily accomodated at Quarter 87 at Government area at Agodi but the headquarters of the Local Government is Bodija. This Local Government is bounded in the west by Ido and Ibadan North West Local Government, bounded in the East ny Lagelu, Egbeda and Ibadan South East Local Government respectively and bounded in the North by Akinyele Local Government. Ibadan North Local Government Area is located approximately on longitude $8^0$5' east of the Greenwich Meridian and Latitude $7^0$23' north of the Equator.

According to the 2006 National Population Census, the population of Ibadan North Local Government was about 306,795 with an area 27km square (km^2). There are 12 wards in the Local Government. Ibadan North has 130 registered private nursery and primary schools.
This study was school based and was carried out in some selected nursery and primary schools in the Local Government. The selected nursery and primary schools to be used for the study included private Nursery and Primary schools, which had under-5 in its enrolment list. The reason being that parents' bringing their children to most private nursery and primary schools drive them to schools most time in their personal vehicles.

3.4 Study Population

The study population included parents who had under-5 admitted in the selected private schools of interest and provided written informed consent to participate in the study in Ibadan North local Government Area.

3.5 Inclusion and Exclusion Criteria

Inclusion

- Parents who had under-5 enrolled in the selected private nursery school of interest, own a private vehicle and gave consent participated in the study

- Private schools where parents bring their children in a vehicle and also gave permission to conduct the study

Exclusion

- ❖ Those who did not fall within the inclusion criteria were excluded.

3.6 Sample Size Determination

The sample size for this research was calculated using the Leslie Kish Formular (Kish, 1965) which is as follows:

$$n = \frac{(Z\alpha)^2 pq}{d^2}$$

Where,

n= Minimum sample size required

Zα= Standard normal deviation set at 1.96 normal inte

P= Estimate of proportion of under-5 riding in front seat of vehicles from previous study lagos precisely = 19.7% (Tolulope et al., 2012).

q= Proportion of people without the behaviour being investigated

[Q=1-P P+Q=1],

q= 1-0.197= 0.803,

d= level of precision= 5%

$n=(Z\alpha)^2 pq / (0.05)^2 = (1.96)^2 \times 0.197 \times 0.803/(0.05)^2$

$=3.8416 \times 0.158191 / 0.0025$

$=0.60770655 / 0.0025$

$n=243.08262$

$n \sim 243$

Adjusting for non-response rate of 10% (to cover up for non-response and attrition), the final sample size was N

Where $N = \frac{n \times 100}{100 - r}$

And n = initial sample size

r = non response rate (10%)

Thus $N = \frac{243 \times 100}{100 - 10} = 270$

A minimum sample size of 243 was calculated, but 270 participants were recruited to cover for non-response and attrition.

3.7 Sampling techniques

A two-stage sampling technique was used to select the respondents.

First, the private nursery schools within Ibadan North LGA are 130 in number and a survey was made to know which of the schools had parents bringing their children in their private vehicles to school and also had under-5. Based on these characteristics, a total of 100 schools were eventually gotten of which 15% of the total number of the schools was calculated to know the total number of schools to be selected. After which random sampling was used to select 15 private nursery schools that was used for the purpose of the study. This was done by balloting.

Secondly, the parents of all the under-5admitted to the private nursery schools were selected based on the available number of under-5 in each selected school (purposive sampling) and the informed consent of the parents .The selection of parents was dependent on the total population size of under-5 in each of the selected private nursery schools. Overall, 270 parents from 15 private nursery and primary schools were selected.

3.8 Instrument for data collection

First, observational checklist was developed to collect data on the seating position of under-5 either at the front (restrained or not restrained) or back seat (restrained or not restrained) as parents dropped them at the selected private schools of study interest (See Appendix II)

Second, a semi-structured questionnaire which was self-administered was used since the respondents were able to read and write (See Appendix I). The questionnaire was structured and has five sections:

Section A: Social demographic characteristics of parents (Age, Gender, Level of education, Occupation, Religion, Ethnicity, Number of children, parity etc.)

Section B: Knowledge of correct seat placement position and age-appropriate restraints for under-5 in vehicles among parents in Ibadan North Local Government Area, Oyo State.

Section C: Parents' perception on dangers or consequences of placing of under-5 in front seat and without restraint in vehicles.

Section D: Practices of parents in respect to correct placement of under-5 and use of age-appropriate safety restraint device for under-5 in vehicles.

Section E: Factors promoting and hindering parents adherence to correct under-5 placement and use of appropriate safety restraints in vehicles.

After administering the questionnaires to the parents on the first day, the research assistants went back either at the close of the school day or the following morning to retrieve the questionnaires.

3.9 Validity and Reliability

3.9.1 Validity of the Study

Validity of the instrument was ensured through the development of a draft instrument by consulting relevant literature, adopting questions from relevant questionnaires of researches related to the study with the help of the supervisor and subjecting the draft to independent, peer and expert reviews, particularly experts in public health.

3.9.2 Reliability of the study

The instrument used to collect data for the study was pre-tested among parents who have under-5 enrolled in the private nursery schools located in Ibadan North East Local Government Area in Oyo State considering the fact that this private nursery schools share similar characteristics with

that of the study site. The questionnaire was administered among 27 (10% of the sample size) eligible respondents. Thereafter, the questionnaires were subjected to a measure of internal consistency using the Cronbach's Alpha model technique. The reliability value obtained for the study was 0.701. The reliability coefficient obtained from this study was used to ascertain the statistical reliability of the instrument.

3.10 Data Collection Process

The period of the data collection lasted for two months (from July to August 2015).The administering of the questionnaires were carried out by five trained research assistants who also collected them back from the respondents. In some schools, teachers opted to assist in the administering and collection of the questionnaires from the respondents. However, the collection of the questionnaires were not carried out on the same day but the following day since it was self-administered except for some respondents who promised to return the questionnaire later during the day as they came to pick up their child(ren).

The procedure for the data collection began with the recruiting and training of five research assistants on administering and collection of the questionnaires. Visits were made to the randomly selected private Nursery and Primary Schools within the study location

- The first visit entailed seeking of permission from the school authority on their willingness to participate in the study. This entailed discussing what the study is all about, the purpose for which the study has to be conducted and the benefits the study will provide if they participated in the study.
- The second visit entailed observing the parents as they dropped their children off in school and this was done by me, the Principal Investigator to avoid intra-observer error. The observation lasted as long as the parents kept on driving into the school which gave a clue on the number of questionnaires to be administered the following day by the research assistants.
- The third visit entailed administering of the questionnaires to as many parents of under-5 who owned a vehicle and gave their informed consents. The team could not wait to retrieve the questionnaires in the morning as the parents were not willing to fill at that time. This made the research assistants come back at the close of the day when they come

to pick up their children or the following day depending on how many they were able to retrieve at each time of the following visit.

- The final visit entailed collecting some of the questionnaire that were not retrieved directly from the parents but were dropped either with the security on duty, teacher or dropped in the child's bag from where it will be picked out since some were told to do so.

The semi structured questionnaire was administered by the principal investigator which was me and the trained research assistants. The questionnaire was administer in English since the parents of under-5 that participated in the study were literates and understood English language. Five research assistants were recruited and trained in questionnaire administration and collection. For every school visited, permission was received from the proprietor / proprietress or head teacher of the school, then the study questionnaire was administered to the parents who gave their informed consent.

In each of the school selected, research assistants were there before the parents starts bringing in their children to administer questionnaires to the parents. For some parents not willing to participate in the study, the research assistants leaves them to move over to the next person until there were no more parents to administer questionnaire to and this was applicable in all the schools selected for the study.

During field work, it was discovered that some head teacher or proprietor/proprietress of the school selected were not willing to allow the parents to participate in the study which was due to some policies made in such schools (not participating in research work). In order to make up for these and to increase the robustness of the study, more schools that were willing to participate were enrolled in the study.

3.11 Ethical Consideration

Ethical approval for this study was obtained from the Oyo State Ethical Review Committee prior to the commencement of the study. Approval letter from the ministry was taken to the selected schools and permission to conduct the study was obtained from the head teacher, proprietor or proprietress of the schools. Informed consent was obtained from each participant after explaining to them the purpose and objective of the study (See Appendix III and IV)

The confidentiality of the respondents was ensured and protected as there was no request for names and personal addresses. The researcher and the research assistants were of good conduct and did not act coercively or in any unethically unacceptable manner. The nature, purpose and processes involved in the study were well explained to the participants with emphasis on confidentiality, privacy and anonymity of information provided. In other to ensure anonymity of responses, code numbers was given to each participant and any form of identification was not included in the questionnaire. Information gathered from the respondents was stored in the computer package for analysis by the principal investigator and with no access to unauthorized persons while the questionnaires that were filled by the respondents were kept and stored in a safe place. Informed consent was obtained from the respondents before administration of the questionnaire.

The outcome of this research is of tremendous benefit to parents and policy makers on the relevance of correct placement and use of age-appropriate restraint for children in reducing infant mortality and morbidity and strengthening strategies to improve child care and safety.

3.12 Data Management Analysis and Presentation

The principal investigator checked all copies of the administered questionnaire one after the other for the purpose of completeness and accuracy. Serial number was assigned to each questionnaire and question for easy identification and for correct data entry and analysis. A coding guide was developed to code and enter each question into the computer for analysis. Analysis was done with the use of Statistical Package for Social Science (SPSS).

The data entered into the computer was subjected to Descriptive (mean) and Inferential (Chi-Square) statistical analyses. Finally, information obtained was summarized and presented in tables and charts. Knowledge scores ≤6, ≤7-13 and ≥14-20 were classified as poor, fair, and good respectively. The perception scores were categorised as ≤4 and ≥5-9 as unfavourable and favourable respectively. The Practice scores were categorised as ≤4 and ≥5-9 as poor and good practice respectively.-

3.13 Limitations of the Study

- Initially, the observation was supposed to be linked to the responses given in the questionnaires administered as only parents being observed were to be given

questionnaires to fill. But during the pre-test, it was discovered that the linkage would not work because the teachers who were the best in position to assist in the observation exercise were not willing to participate in the study given reasons for shortage of time and their busy schedule despite incentives were promised to be given to them. The reasons for wanting to make use of the teachers was as a result of their familiarity with the under-5 and their parents as this would have helped in the administering of the questionnaires since it was only those that were observed would be given a questionnaire and an observer who is not familiar with the under-5 and their parents may not actually administer the questionnaire to the correctly observed parents. This would have been possible if there was more time to carry out the research.

- Only 15% of the total number of private nursery schools was used due to time and financial constraint.

CHAPTER FOUR

RESULTS

This chapter presents the results of the study. This includes the socio demographic characteristics of the parents of under-5 children in the study area, the knowledge of placement of under-5 in front seats of vehicles by the respondents, perception of dangers or consequences of placing under-5 in front seats and without restraint in vehicles, practice of placement of under-5 in front seats of vehicles and factors promoting or hindering parents to adhere to correct child placement and use of appropriate safety restraint in the study area.

4.1 Socio demographic characteristics of the respondents

Respondents' Distribution on Sex and Age

Majority of the respondents are females 168(62.2%) and the rest male 102 (37.8%). The frequency distribution by age shows that 22(8.1%) are between the ages of 20 and 29 years old while 127(47.0) are between the ages of 30 and 39 years old, 100(37.0%) are between 40 and 49 years old, 15(5.6%) are between 50 and 50 years old and 6(2.2%) are in the range of 60 years old and above. The findings reveal that, a significant proportion of the respondents are between 30 and 39 years old (See table 4.1).

Respondents' Distribution on Marital Status, Occupation and Religion

Almost all the respondents are married 264(97.8%) while only a small proportion of 5(1.9%) are single and just 1(0.4%) are cohabiting. The research findings show that the civil servants are more than any other group 134(49.6%) followed by the self-employed 66(24.4%) and then the professionals 61(22%) such as the journalist, medical practitioners, Banker/accountant, Architect, Researcher etc. The artisans are 6(2.2%) while those that are retired are 3(1.1%).Majority of the respondents are Christians 213(78.9%) while only 57(21.1%) are Muslims (See table 4.1).

Respondents' Distribution on Ethnicity and Level of Education

Although a very large proportion of the respondents are Yorubas 219(81.1%), the study result shows that other respondents are from diverse ethnic groups. 29(10.7%) are Igbos, 4(1.5%) are

Igedes while 1(0.4%) are from Idoma, Estako, Igala, Ukwani, Ora, Okoi, Urhobo, Esan each. and Ejagham, Bini, Ibibio and Hausa make up 2(0.7%) of the total respondents each. Almost all the parents of the under-5 children recruited as respondents for this study has tertiary education 257(95.2%) while only 9(3.3%) has secondary education and 4(1.5%) has primary education (See table 4.1).

Respondents' Distribution on Number of Child(ren) and Child(ren) between 0-5 Years Old

A large percentage of the parents 250(92.6%) has between 1 and 4 under-5 children while only 20(7.4%) has more than four children. All the respondents 270(100%) have children below 5 years old. This is because having at least one child who is 5 years old or less is a strong inclusion criterion for participating in this study (See table 4.1).

Respondents' Distribution on Who Does Most of the Driving

Findings in this study reveal that the husband does most of the driving as stated by 161(59.6%) of the respondents while 86(31.9%) of the respondents indicated that most of the driving is being done by the wife. 20(7.4%) indicated that both the husband and the wife do most of the driving and only 3(1.1%) respondents indicated that the driver does most of the driving (See table 4.1).

Respondents' Distribution on the Age of their Children and their Class

Only 5(1.9%) of all the respondents have child(ren) less than one year old while 38(14.1%) have child(ren) of one year old. 50(18.5%), 64(23.7%), 73(27.0%), 40(14.8%) have child(ren) aged two, three, four and five years old respectively. 58(21.5%) of the children of the respondents are in crèche/playgroup while 43(15.9%) are in pre-nursery/reception, 67(24.8%) are in nursery one/kindergarten one, 65(24.1%) are in nursery two/kindergarten two, 26(9.6%) are in primary one and 11(4.1%) are in primary two (See table 4.1)

Table 4.1: Socio-demographic Characteristics of Respondents

N=270

Variables		Frequency	Percentage (%)
Gender	Male	102	37.8
	Female	168	62.2
Age	20-29 years	22	8.1
	30-39 years	127	47.0
	40-49 years	100	37.0
	50-59 years	15	5.6
	≥ 60 years	6	2.2
Marital Status	Married	264	97.8
	Single	5	1.9
	Cohabiting	1	0.4
Occupation	Civil Servant	134	49.6
	Professional	61	22.6
	Self Employed	66	24.4
	Artisans	6	2.2
	Retired	3	1.1
Religion	Christianity	213	78.9
	Islam	57	21.1
Ethnicity	Yoruba	219	81.1
	Igbo	29	10.7
	Hausa	2	0.7
	Igede	4	1.5
	Others	16	5.9
Level of Education	Tertiary	257	95.2
	Secondary	9	3.3
	Primary	4	1.5

	1-4	250	92.6
Number of Children	5-8	20	7.4
	Husband	161	59.6
Who does most of the driving	Wife	86	31.9
	Both	18	6.7
	Driver	3	1.1
	I or their dad	2	0.7
	< 1 year	5	1.9
Age of Child	1 year	38	14.1
	2 years	50	18.5
	3 years	64	23.7
	4 years	73	27.0
	5 years	40	14.8
	Crèche/Playgroup	58	21.5
	PreNursery/Reception	43	15.9
Class of Child	Nursery 2/KG 1	67	24.8
	Nursery 2/KG 2	65	24.1
	Primary 1	26	9.6
	Primary 2	11	4.1

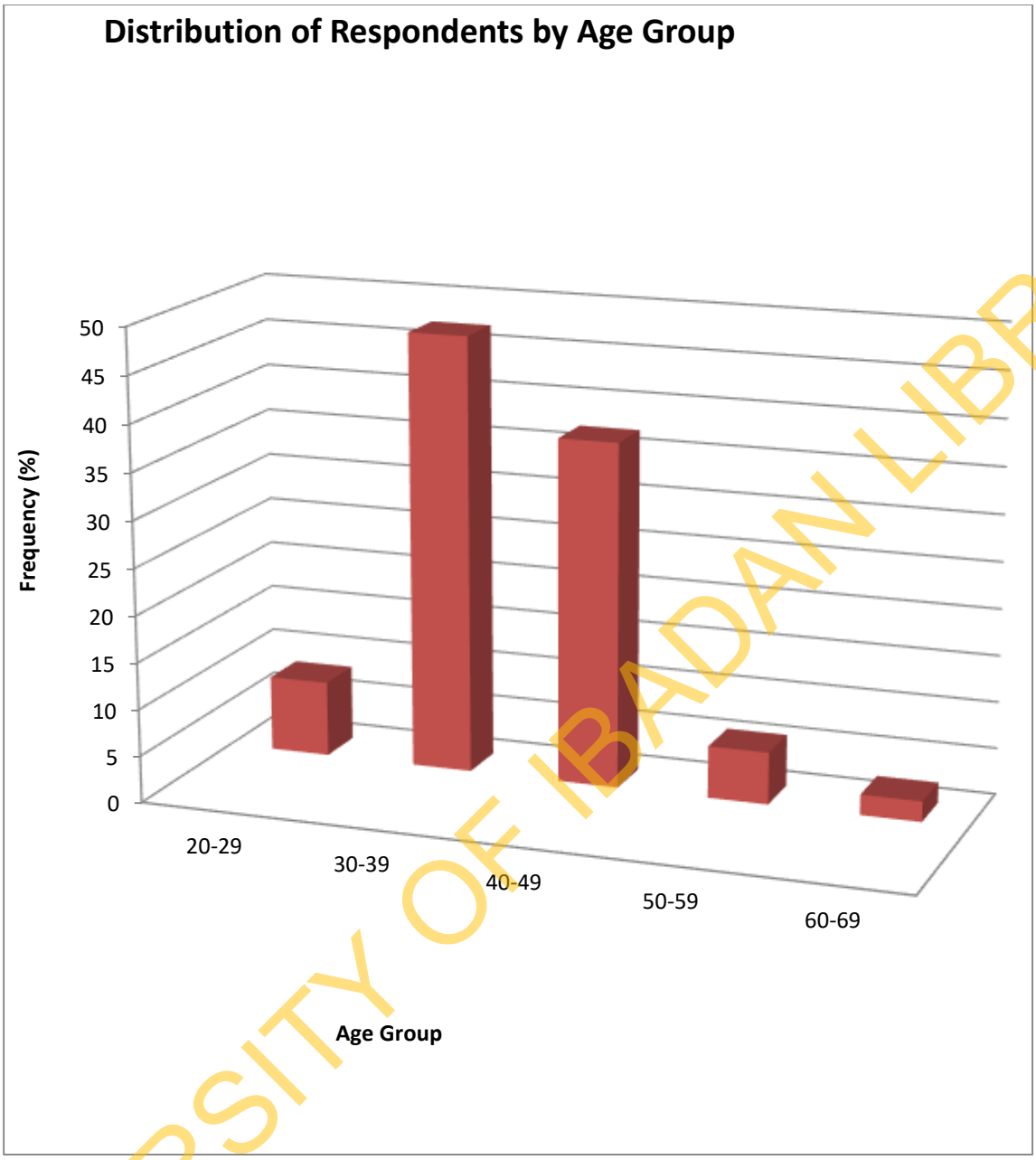

Figure 4.1: Distribution of Respondents by Age group

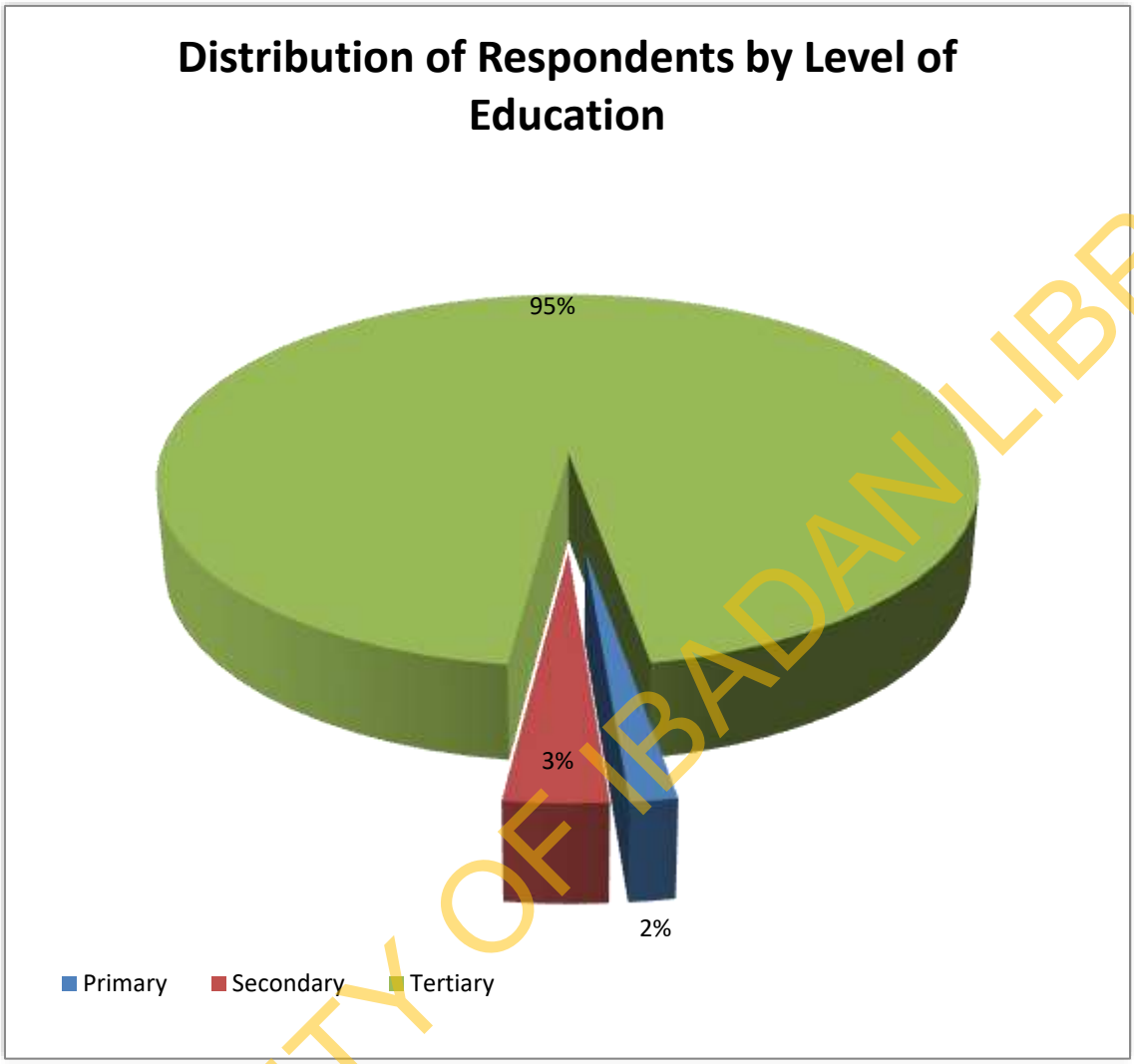

Figure 4.2: Distribution of Respondent' Level of Education

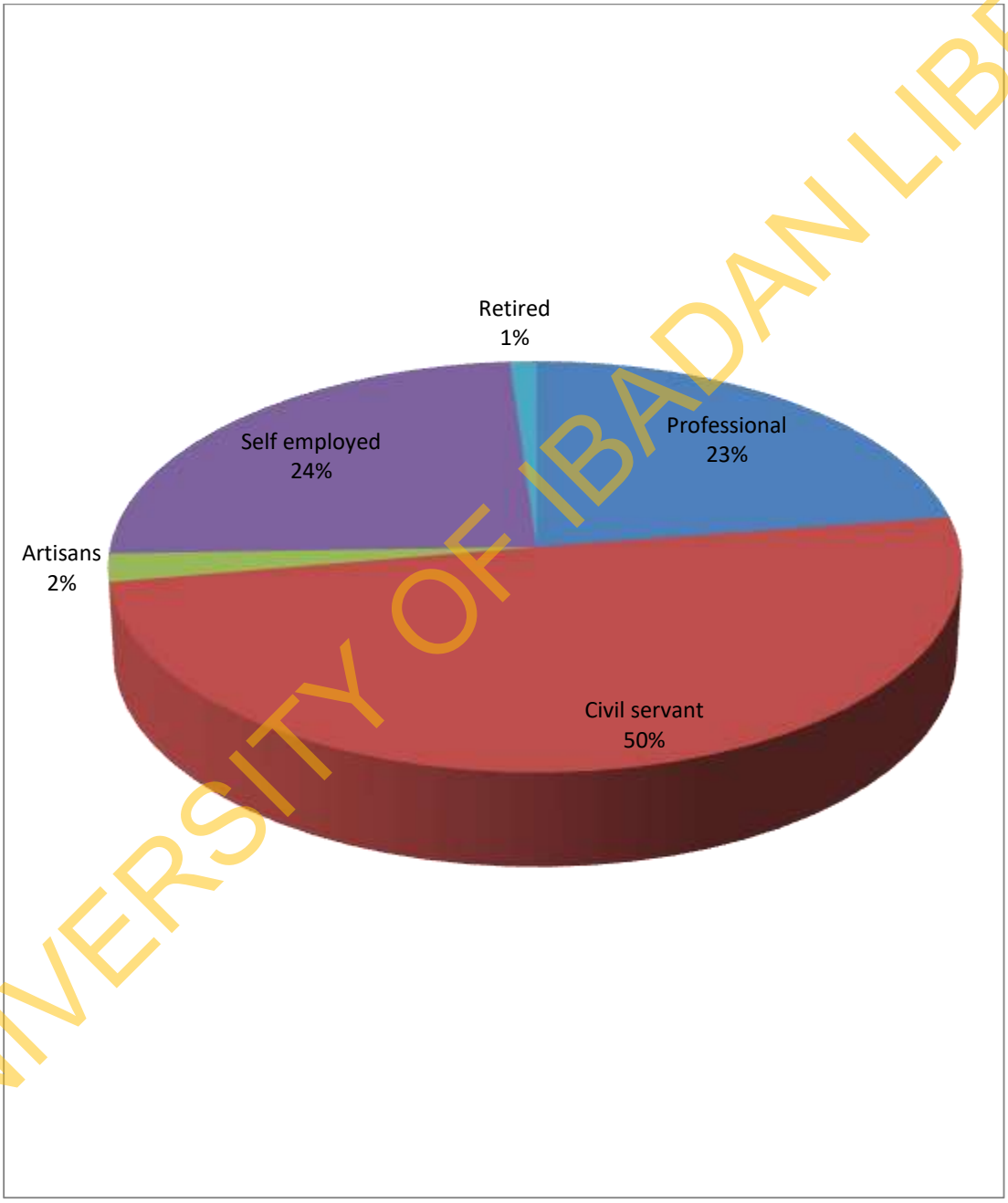

Figure 4.3: Distribution of Respondents by Occupation

4.2 Knowledge of Placement of Under-5 in Front Seats of Vehicles by the Respondents

Respondents' Knowledge on Child Safety and Child Safety Seats

Findings from this study show that 109(40.4%) of parents of under-5 children do not know what child safety means. 65(24.1%) of them gave partially correct response while 96(35.6%) showed correct knowledge of what child safety is. Similarly, 130(48.1%) of them gave incorrect responses when asked on what child safety seats are while 31(11.5%) gave partially correct response and 109(40.4%) gave correct answers to the question (See table 4.2a, 4.2b and 4.2c).

Respondents' Knowledge on Safest Place and Seating Position for a Child to travel in a Car

When asked for the safest place and seating position for a child to travel in a car, almost all the respondents 250(92.6%) gave partially correct responses while 10(3.7%) gave incorrect response and only 10(3.7%) gave the correct answer. (See table 4.2d).

Respondents' Knowledge on the Types of Restraint Seat

Majority 221(81.9%) of the respondents reported that they did not know any type of restraint seat while only 49 (18.1%) of the respondents reported they knew. When asked to mention the types of restraint known, 13 (4.8%) of the respondents mentioned booster seats as the child restraints they know while 28(10.4%) knew about infant capsule and 7(2.6%) know of forward facing seats and only 1(0.4%) know about the convertible seat. (See Table 4.2a)

Respondents' Knowledge on Consequences of Placing of Children in Front Seat of Vehicles and not properly positioned in a Restraint Seat

Most of the respondents 208(77.0%) are knowledgeable on the consequences of placing children in front seats of vehicles and not properly positioned in a restraint seat while only 62(23.0%) are not. Sixty-one (22.5%) said the child may hit his or head in the case of accident or exposes a child to physical hazard, 31(11.5%) said the child may have contacts with airbags which are dangerous in case of vehicle crash or accident, 17 (6.3%) said it can cause death, 14(5.2%) said it can cause accident, 2(0.8%) said the seatbelt may not hold the child, 5(1.9%) said drivers are subject to fine for child not properly placed in the car, 33(12.2%) said can make the driver lose concentration, 16(5.9%) said the child might be forcefully touching part of the car, 71(12.3%)

said the child may be hurt or injured in case of accident, 41(15.2%) said it can lead to accident, 20(7.4%) said the child may be thrown out in case of car crash, 1(0.4%) said in case of accident, it could to permanent disability, 3(1.1%) said the car air conditioner will affect the child/discomfort and 1(0.4%) said the car may stop in motion (See table 4.2a and 4.2e).

Respondents' Knowledge on Appropriate Age to Commence the Child Restraint Seats, Use of Seat Belt and front seating

Majority of the respondents 190(70.4%) do not know the appropriate age to commence the child restraints seats while only 80(29.6%) know the appropriate age to commence the child restraint seats for a child. Similarly, 202(74.8%) of the respondents do not know the age to commence the use of seat belt for a child while only 68(25.5%) know. Also, 204(75.6%) do not know the age to commence front seating for a child while only 66(24.4%) knows (See table 4.2a).

Respondents' Knowledge of Law on Child Safety Seats

One hundred and eighty-nine respondents (70.0%) do not know of any law on child safety seats while only 81(30%) knows. Out of the respondents who know, 7(2.6%) stated see road safety handbook as the law they know, 37(1.7%) stated that any child between the age of 0-13yrs should not be placed in the front seats, 1(0.4%) stated that a child should use seatbelt in the front seat, 2(0.7%) stated that safety seats should not be placed in the front seat and 1(0.4%) stated that a child must be appropriately placed in a vehicle for his/her safety (See table 4.2a and 4.2f)

Respondents' Response of where Information on Child Safety Seats was gotten from

One hundred and ninety-two respondents (71.1%) indicated that the questions were not applicable to them since they have no knowledge of it. Only 30(11.1%) indicated that information on child safety seats was gotten from the media while 15(5.6%) said it was from the Federal Road Safety Corps (FRSC) and 10(3.7%) said it was from friends. 4(1.5%) said it was from the school, 3(1.1%) was from colleagues, 4(1.5%) was from vehicle manual, 2(0.7%) from commercial drivers, 2(0.7%) from experience while 1(0.4%) from general information, discretion, highway code each (See table 4.2a).

In summary, almost half of the total respondents 132(48.9%) had poor knowledge while a little above half 137(50.7%) had fair knowledge and just one respondent (0.4%) had good knowledge

of placement of under-5 children in front seats of vehicles. However, the mean knowledge score of all the respondents was fair (6.46 ± 2.73).

Table 4.2a: Respondents' Knowledge of Placement of Under-5 in Front Seats of Vehicles (N=270)

Knowledge Questions	Responses		
	Incorrect (%)	Partially Correct (%)	Correct (%)
What does child safety mean to you?	109 (40.4)	65 (24.1)	96 (35.6)
What do you understand by child safety seats?	130 (48.1)	31 (11.5)	109 (40.4)
Where is the safest place and seating position for a child to travel in a car?	10 (3.7)	250 (92.66)	10 (3.7)
	Yes (%)		**No(%)**
Do you know of any child restraint seat?	49 (18.1)		221 (81.9)
If YES, name them(Booster Seat)	13 (4.8)		257 (95.2)
If YES, name them(Infant Capsule)	28 (10.4)		242(89.6)
If YES, name them(Convertible Seat)	1 (0.4)		269 (99.6)
If YES, name them(Forward facing Seat)	7 (2.6)		263 (97.4)
Do you know of any consequences in placing of children in front seat of vehicles and not properly positioned in a restraint seat?	208 (77.0)		62 (23.0)
If YES, highlight any two of them known			
	Incorrect (%)		**Correct (%)**
What is the appropriate age to commence the child restraint seats?	190 (70.4%)		80 (29.6)
What is the age to commence the use the use of seat belt?	202 (74.8%)		68 (25.2)
What is the appropriate age to commence front seating?	204 (75.6)		66 (24.4)
	Yes (%)		**No (%)**
Do you know of any law on child safety seats?	192 (71.1)		78 (28.9)
	Incorrect (%)	**Partially Correct (%)**	**Correct (%)**
If YES, state the law	230 (85.2)	3 (1.1)	37 (13.7)

Table 4.2b: Respondents' knowledge on Definition of Child Safety (N=270)

Definition of Child Safety	**No (%)**
Protection of child against harm or danger***	96(35.6)
Security of life away from accident**	61(22.3)
Safe condition and safe environment at all times**	49(18.1)
Don't know*	52(19.4)
No response*	12 (4.4)

Correct responses***

Partially correct responses**

Incorrect responses*

Table 4.2c: Respondents' knowledge on the Understanding of Child Safety Seats

N=270

The Understanding of Child Safety Seats	**No (%)**
Seats that keeps a child in the car or protect from injury***	109 (40.4)
Belts used in the car to control and protect a child**	54(20.0)
Don't know*	107(39.6)
No response*	23 (8.5)

Correct responses***

Partially correct responses**

Incorrect responses*

Table 4.2d: Respondents' knowledge on the correct placement and seating position of a child

N=270

Correct placement and seating position of a child	**No (%)**
Back Seat**	237(87.8)
Back Seat left side**	7(2.6)
Car carriers secure with seat belt*	2(0.7)
Back seat with seat belt**	4(1.5)
Back seat between elderly ones**	1(0.4)
Beside a conscious matured adults*	1(0.4)
Front seat*	3(1.1)
Middle of the back seat***	9(3.3)
Car Seat*	1(0.4)
Both front and back*	1(0.4)
Back seat and at the right side**	1(0.4)
Either at the middle or rear seat*	1(0.4)
Don't know*	2(0.7)

Correct responses***

Partially correct responses**

Incorrect responses*

Table 4.2e: Respondents' knowledge on the Consequences of placing of Under-5 in front seat of vehicles and not correctly positioned in a restraint seat

N=540

Consequences in placing of Under-5 in front Seat of vehicles and not correctly positioned in a restraint seat	**No (%)**
The child may hit his or her head in the case of accident	133 (24.6)
Contacts with airbags which are dangerous in case of vehicle crash or accident	31 (5.7)
The seat belt may not hold the child	2 (0.4)
Drivers are subject to fine for child not properly placed in the car	5 (0.9)
Can make the driver lose concentration	33 (6.1)
Forcefully touching part of the car	16 (3.0)
The child may be hurt or injured in case of accident	71 (13.1)
The child may be thrown out in case of car crash	20 (3.7)
In case of accident, it could lead to permanent disability	1 (0.2)
Don't know	130 (24.1)
No response	98 (18.1)

Multiple responses

Table 4.2f: Respondents' knowledge on Child's Safety Law

N=270

Stating of Child Safety Law	**No (%)**
Any child between the age of 0-13 years should not be placed in the front seats***	37 (13.7)
See road safety hand book*	7 (2.6)
A child should use seat belt in the front seat*	1 (0.4)
Safety seats should not be placed in the front seats**	2 (0.7)
A child must be properly placed in a vehicle for his or her safety**	1 (0.4)
Don't know*	197(73.0)
No response*	25 (9.3)

Correct responses***

Partially correct responses**

Incorrect responses*

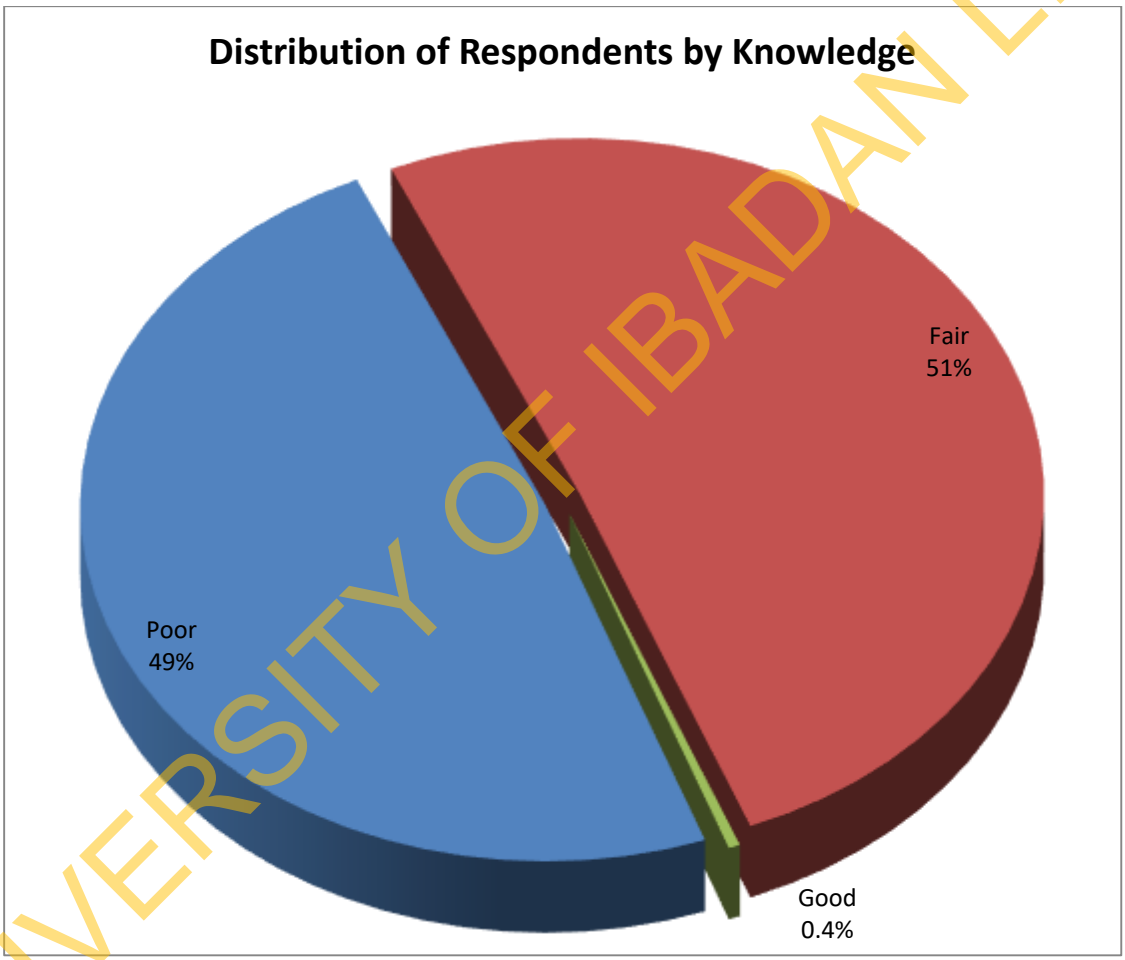

Figure 4.4: Respondents' Knowledge on placement of Under-5 in front seats of vehicles

4.3 Perception on Dangers or Consequences of Placing Under-5 in Front Seats and without Restraint in Vehicles

Respondents' Perception on having an Accident while driving and Child Injury

One hundred and eighty-four respondents (68.1%) perceived that they could be involved in a crash while driving while 86(31.9%) do not perceive themselves to be susceptible to a crash while driving. Similarly, 189(70.0%) of the respondents believed that a child can be injured in the course of a crash even when in the vehicle with the parent while 81(30%) do not believe that (See table 4.3a).

Respondents' Perception on if restraining a child would protect him or her from injury in a crash while driving

Asking if restraining a child would protect him or her from injury in a crash while driving, 241(89.0%) agreed that it would while 29(10.7%) disagreed that it would not. Similarly, 219(81.1%) of the total respondents believed that placing children in an age-appropriate restraint seat would protect them from death in a crash while driving and 51(18.9%) did not believe the restraint seat could protect them. Majority 238(88.1%) of the respondents perceived that children are not as safe in the front seat as in the back seat while 32(11.9%) perceived there is no difference in their safety either in the front or back seat (See table 4.3a).

A high proportion of the respondents 233(86.3%) disagreed with the fact that placing their child in the front seat would not constitute any danger to the child since they do not have airbags in their cars while only 37(13.7%) agreed to it. One hundred and seventy-two respondents (63.7%) disagreed with the belief that their children cannot be injured in a crash because they drive carefully while 98(36.3%) agreed with it. Two hundred and eleven respondents (78.1%) considered child restraints to provide better protection in a crash than adult seatbelt for children while 59(21.9%) considered it not better (See table 4.3a).

Respondents' Perception on how badly a child can be hurt if involved in a crash

A few number of the respondents 33(12.2%) think a child would have no injury if involved in a crash while 48(17.8%) also believe the injury will be a minor one which is treatable at home. 50(18.5%) think the injury could be severe which will require seeing a doctor, 49(18.1%) think it

could be moderately-severe which will need going to the hospital, 37(13.7%) think it could be severe and might require calling an ambulance at the crash and 53(19.6%) think it could be fatal (See table 4.3b).

Summarily, only 37(13.7%) had unfavourable perception while majority of the respondents 233(86.3%) have favourable perception of placement of under-5 children in front seats of vehicles. The mean perception score was also good (6.25 ± 1.64).

Table 4.3a: Perception on Dangers or Consequences of Placing Under-5 in Front Seats and without Restraint in Vehicles

N=270

Perception Statements	**Responses**	
	Incorrect (%)	**Correct (%)**
I do not think I can be involved in a vehicle crash while I am driving.	86 (31.9)	184 (68.1)
I do not think my child can be injured in the course of a crash even when in the vehicle with me.	81 (30.0)	189 (70.0)
I think restraining my children would protect them from injury in a crash while driving.	29 (10.7)	241 (89.3)
I think placing my children in an age-appropriate restraint seat would protect them from death in a crash while driving.	51 (18.9)	219 (81.1)
I think children are just as safe in the front seat as in the back seat.	32 (11.9)	238 (88.1)
I do not have airbags in my car; therefore placing my child in the front seat would not constitute any danger to the child.	37 (13.7)	233 (86.3)
I believe that my children cannot be injured in a crash because I drive carefully.	98 (36.3)	172 (63.7)
I consider child restraints to provide better protection in a crash than adult seat belts for children	59 (21.9)	211 (78.1)

Table 4.3b: Perception of Dangers or Consequences of Placing Under-5 in Front Seats and without Restraint in Vehicles

N=270

Perception Question		**No (%)**
How badly do you think a child can be hurt if involved in a crash	No Injury	22 (12.2)
	Minor (treat at home)	48 (17.8)
	Moderate (see a doctor)	50 (18.5)
	Moderate-severe (go to hospital)	49 (18.1)
	Severe (call for ambulance at the crash)	37 (13.7)
	Fatal	53 (19.6)

4.4 Practice of Placement of Under-5 in Seats of Vehicles and the Use of Age-Appropriate restraint seats

More than half of the parents 146(54.1%) do not place their children at the back seat without a restraint while dropping them off at school while 124(45.9%) place them at the back seat with a restraint. In contrast, 124(45.9%) of the respondents place their child(ren) in the front seat while driving while 146(54.1%) do not. A good proportion of the respondents 128(47.4%) do have their spouses seat with the child in the front seat while driving while 142(52.6%) do not. When asked if they placed their children in between their knees while driving, only 22(8.1%) admitted that they do it while a very large percentage of the respondents 248(91.9%) do not place their children in between their knees while driving. Majority of the respondents 188(69.6%) do not drive with a restraint seat for their child in front seat while 82(30.4%) do. Similarly, more than three-quarter of the respondents 222(82.2%) do not practise keeping their children standing while driving while 48(17.8) still practise it. A significant number of the respondents 189(70.0%) do not drive with their children anywhere they go while 81(30.0%) still drive with their children anywhere they go.

Only 113(41.9%) place their children at the back seat while driving and 157(58.1%) do not place their children at the back seat with a restraint while driving. In the same vein, only 102(37.8%) of the respondents admitted to use age-appropriate restraint for their children while driving and 168(62.2%) admitted not to use it (See table 4.4).

In summary, two-third of all the respondents 180(66.7%) have good practice and only one-third 90(33.3%) have poor practice of placement of under-5 in front seats of vehicles.

Table 4.4: Practice of Placement of Under-5 in Seats of Vehicles and Use of Age-Appropriate Restraint Seats

N=270

Practice Statements	**Responses**	
	Incorrect (%)	**Correct (%)**
I place my child at the back seat without a restraint while dropping them off at school	146 (54.1)	124 (45.9)
I place my child in the front seat while driving	124 (45.9)	146 (54.1)
My spouse seats with my child in the front seat while driving	128 (47.4)	142 (52.6)
I place my child in between my knees while driving	22 (8.1)	248 (91.9)
I drive with a restraint seat for my child in the front seat	82 (30.4)	188 (69.6)
I keep my child standing between the two front seat while driving	48 (17.8)	222 (82.2)
I drive with my children in the car anywhere I go to	81 (30.0)	189 (70.0)
I place my child at the back seat with a restraint while driving	157 (58.1)	113 (41.9)
My child uses age-appropriate restraint while driving	168 (62.2)	102 (37.8)

4.5 Perceived Factors Influencing Parents Adherence to Correct Child Placement and Use of Age- Appropriate Restraint Seats

Considering the perceived factors influencing adherence to correct placement and use of appropriate safety restraints, 84(31.1%) stated that the child restraint seats are too expensive while 186(68.9%) do not see child restraint seats as expensive. The difficulty in fixing three car safety seats on the back of the car if car size is small is seen by 128(47.4%) of the respondents as a factor affecting its use while 142(52.6%) do not consider it as a factor. On the other hand, 66(24.4%) of the respondents agreed that the car safety seats are not big enough and this affects its usage while 204(75.6%) do not agree to this being a factor affecting its usage (See table 4.5). More than half of the respondents 141(52.2%) identified child objecting to be restrained as a factor affecting the use of restraint seats while 129(47.8%) do not identify it as a factor. Seventy (25.9%) believe that not being able to watch the child closely if placed at the back is a factor influencing placement of the child in a car restraint at the back seat while 200(74.1%) do not consider that as a factor. Eighty-three (30.7%) of the respondents indicated that they are not even aware of age-appropriate restraint and this is seen as a factor while 187(69.3%) disagreed with not being aware of age-appropriate restraint seat for children. Unavailability of child restraint seats in the market was seen as a factor by only 51(18.9%) while 219(81.1%) do not agree to unavailability of the restraint seats (See table 4.5). Some of the respondents 62(23.0%) identified child's loneliness at the back as a factor influencing placement of the child at the back seat while majority do not agree to it. Thirty-nine respondents (14.4%) stated that they do not use car restraint seats because it is difficult to use while a larger proportion of the respondents 231(85.6%) objected it as a factor affecting use of the restraint seats (See table 4.5).

Table 4.5: Perceived Factors Influencing Parents Adherence to Correct Under-5 Placement and Use of Age- appropriate Restraint Seats (N=270)

Factor statements	Responses	
	Yes (%)	No (%)
Child restraint seat are too expensive	84 (31.1)	186 (68.9)
Difficulty in fixing three car safety seats on the back seat of the car if car size is small	128 (47.4)	142 (52.6)
Child objecting to be restrained	141 (52.2)	129 (47.8)
Car safety seats not big enough	66 (24.4)	204 (75.6)
I cannot watch my child closely if placed at the back	70 (25.9)	200 (74.1)
I am not aware of age-appropriate restraint seat for children	83 (30.7)	187 (69.3)
Child restraint seats are not available in the markets	51 (18.9)	219 (81.1)
Child will be lonely at the back if he or she drives with me alone	62 (23.0)	208 (77.0)
Car restraint seats are too difficult to use, so I don't use them.	39 (14.4)	231 (85.6)

4.6 Observation of Respondents on Placement of Under-5 in Front Seats of Vehicles and Age-appropriate Restraint Use while driving their Children to Schools

Distribution of Observed Respondents on their Gender, Child's Class and Child's Age

The findings of the observation showed that out of 300 (100%) respondents that were observered while dropping their child in school, majority 165(55.0%) were females and others (45.0%) were males. Only 6(2.0%) of the respondents' child observed are less than one year old while 71(23.7%) are child(ren) of one year old. 60(20.0%), 74(24.7%), 48(16.0%), 41(13.7%) are child(ren) aged two, three, four and five years old respectively. 96(32.0%) of the children of the respondents observed are in crèche/playgroup while 41(13.7%) are in pre-nursery/reception, 81(27.0%) are in nursery one/kindergarten one, 53(17.7%) are in nursery two/kindergarten two, 25(8.3%) are in primary one and 4(1.3%) are in primary two (See table 4.6a).

Distribution of Observed Respondents on properly restraining and Sitting Position of their children

Most of the respondents 184(61.3%) observed were restrained while 116(38.7%) were not restrained. 70(23.3%) of the respondents not restrained were males while 46(16.3%) were females. Likewise 94(31.3%) of males were restrained and 90(30.0%) of the females were also restrained. (See Table 4.6b)

Much more than half of the children 231(77.0%) observed were placed at the back seat and 69(23.0%) at the front seat. Out of the total number 69(23.0%) placed in the front seat, 65(94.2%) of the children were not restrained, 3(4.3%) were placed in a child seat and 1(1.5%) was seen using a seat belt. Likewise 222 (74.0%) out of the children placed at the back seat were not restrained and 9(3.0%) were placed in a child seat at the back seat of the vehicle. (See Table 4.6b)

Table 4.6a: Observed Socio-demographics Characteristics of Respondent and Children while Driving

N=300

Variables		Frequency	Percentage (%)
Gender	Male	135	45.0
	Female	165	55.0
Child's Age	Less than 1year	6	2.0
	1 year	71	23.7
	2 years	60	20.0
	3 years	74	24.7
	4 years	48	16.0
	5 years	41	13.7
Child's Class	Creche/Playgroup	96	32.0
	Prenursery/Reception	41	13.7
	Nursery 1/ Kg 1	81	27.0
	Nursery 2/ Kg 2	53	17.7
	Primary 1	25	8.3
	Primary 2	4	1.3

Table 4.6b: Distribution of Respondents based on Observed Characteristics

N=300

Variables Descriptors		**Frequency**	**Percentage (%)**
Driver restrained	Yes	184	61.3
	No	116	38.7
Gender of respondent restrained	Male	94	31.3
	Female	90	30.0
Gender of respondent not restrained	Male	70	23.3
	Female	46	15.3
Seat position	Front Seat	69	23.0
	Back Seat	231	77.0
Front Seat Restraint Type	Not Restrained	65	94.2
	Child Seat	3	4.3
	Seat belt	1	1.5
Back Seat Restraint Type	Not Restrained	222	96.1
	Child seat	9	3.9

4.7 Test of hypotheses

The results of the hypothesis tested are shown below:

Hypothesis 1: There is no significant association between respondents' Socio-demographics and knowledge of placement of Under-5 in front seats of vehicles and age-appropriate use. The results of the findings are shown in Table 4.8. The table shows a statistical association between Level of education of the respondents and the knowledge of placement of Under-5 in front seats of vehicles and age-appropriate use with P = 0.013 therefore, the null hypothesis was rejected for the variable. However, there were no significant association between sex (P=0.575), number of children (P=1.000), occupation (P=0.096), age of child (P=0.959) and the knowledge of placement of Under-5 in front seats of vehicles and age-appropriate use. Therefore, the null hypothesis was not rejected for variables; sex, number of children, age of child and occupation.

Hypothesis 2: There is no statistical association between knowledge of the respondents on placement of Under-5 in front seats of vehicles and age-appropriate restraint use and perception on dangers or consequences of placement of Under-5 in front seat and non-use of age-appropriate restraint. The result of the finding is shown in Table 4.9. Fisher's Exact test was used to test if there is an association between knowledge of the respondents on placement of Under-5 in front seats of vehicles and age-appropriate restraint use and perception on dangers or consequences of placement of Under-5 in front seat and it was found that there is no significant association statistically with P = 0.162. This means that the knowledge of the respondents on knowledge of the respondents on placement of Under-5 in front seats of vehicles and age-appropriate restraint use had significant influence on their perception on dangers or consequences of placement of Under-5 in front seat. Therefore, the null hypothesis was accepted.

Hypothesis 3: There is no significant association between knowledge of the respondents on placement of Under-5 in front seats of vehicles and age-appropriate restraint use and placement practices of Under-5 in front seat and age-appropriate restraint use. The result of the finding is shown in Table 4.10. Fisher's Exact test was used to test if there is an association between knowledge of the respondents on placement of Under-5 in front seats of vehicles and age-appropriate restraint use and placement practices of Under-5 in front seat and age-appropriate

restraint use, it was found that there is no significant association statistically with P = 0.162. This means that the knowledge of the respondents on placement of Under-5 in front seats of vehicles and age-appropriate restraint use has no significant influence on their placement practices of Under-5 in front seat and age-appropriate restraint use. Therefore, the null hypothesis was accepted.

Hypothesis 4: There is no significant association between perceptions on dangers or consequences of placement of Under-5 in front seat and non-use of age-appropriate restraint and placement practices of Under-5 in front seat and age-appropriate restraint use. The result of the finding is shown in Table 4.14. Chi square was used to test if there is an association perception on dangers or consequences of placement of Under-5 in front seat and non-use of age-appropriate restraint and placement practices of Under-5 in front seat and age-appropriate restraint use, it was found that there is no significant association statistically with P = 0.169. This means that the perception on dangers or consequences of placement of Under-5 in front seat and non-use of age-appropriate restraint has no significant influence on their placement practices of Under-5 in front seat and age-appropriate restraint use. Therefore, the null hypothesis was accepted.

Table 4.7: Association between Knowledge of Placement of Under-5 in Front Seats of Vehicles and Socio-demographic Characteristics of Respondents

n=270		Knowledge			X^2	P-value	Null Hypothesis
		Poor (%)	Fair (%)	Good (%)			
Occupation	Professional	25(9.3)	35(13.0)	1(0.4)			
	Civil Servant	64(23.7)	70(25.9)	0(0.0)	14.811	.096	Accepted
	Artisans	4(1.5)	2(0.7)	0(0.0)			
	Self Employed	39(14.4)	27(10.0)	0(0.0)			
	Retired	0(0.0)	3(1.1)	0(0.0)			
Level of Education	Primary	2(0.7)	2(0.7)	0(0.0)			
	Secondary	9(3.3)	0(0.0)	0(0.0)			
	Tertiary	121(44.8)	135(50.0)	1(0.4)	14.723	.013	Rejected
	Islam	35(13.0)	22(8.1)	0(0.0)			
Number of Children	1-4	122(45.2)	127(47.0)	1(0.4)			
	5-8	10(3.7)	10(3.7)	0(0.0)	1.036	1.000	Accepted
Gender	Male	50(18.5)	51(18.9)	1(0.4)			
	Female	82(30.4)	86(31.9)	0(0.0)	1.577	.575	Accepted
Age of Child	< 1 year	2(0.7)	3(1.1)	0(0.0)			
	1 year	18(6.7)	20(7.4)	0(0.0)			
	2 years	28(10.4)	22(8.1)	0(0.0)			
	3 years	31(11.5)	33(12.2)	0(0.0)	7.335	.959	Accepted
	4 years	33(12.2)	39(14.4)	1(0.4)			
	5 years	20(7.4)	20(7.4)	0(0.0)			

Table 4.8: Association between Respondents' Knowledge and Perception on danger of Placement of Under-5 In Front Seats and without Restraint in Vehicles

n=270		Knowledge			X^2	df	P-Value	Null Hypothesis
		Poor (%)	**Fair (%)**	**Good (%)**	6.449	2	0.162	**Accepted**
Perception	**Good (%)**	107 (39.6)	125(46.3)	1 (0.4)				
	Poor (%)	25 (9.3)	12 (4.4)	0 (0.0)				

4.9: Association between Respondents' Knowledge and Practice of Placement of Under-5 in Front Seats of Vehicles and Use of Age-Appropriate Restraint Seats

n=270	Knowledge			X^2	P-value	Df	Null Hypothesis
	Poor (%) (%)	Fair (%)	Good	3.119	0.162	2	Accepted
Practice Good (%)	84 (31.1)	96 (35.6)	0(0.0)				
Poor (%)	48 (17.8)	41 (15.2)	1 (0.4)				

Table 4.10: Association between Respondents' Perception and Practice of Placement of Under-5 in Front Seats of Vehicles and Age-Appropriate Restraint Use

n=270		Practice		X^2	Df	P-Value	Null Hypothesis
		Poor (%)	**Good (%)**	1.895	1	0.169	
	Good (%)	74 (31.8)	159 (68.2)				**Accepted**
Perception	**Poor (%)**	16 (43.2)	21 (56.8)				

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATION

The study aimed at assessing the knowledge and practice of placement of Under-5 in front seats of vehicle among parents in Ibadan North Local Government Area, Oyo State. This chapter explains the results given in the previous chapter. The demographic characteristics of the respondents, their knowledge about placement of Under-5 in front seat of vehicle and perception on dangers or consequences of wrong placement position and non usage of age-appropriate restraint seats were investigated. The perceived factors that influence the adherence to correct placement practices and the various practices in respect to correct placement of Under-5 and use of age-appropriate restraint seats among parents were also determined. Implications of the findings of this study to health promotion and education were also discussed and recommendations were made at the end of this report.

5.1 Respondents Socio-demographic characteristics

In the study, majority of the respondents are females (62.2%). This may be due to the fact that males are seen to be the bread winner of most families who have to leave the house as early as possible in search of livelihood but the women are seen to stay back to care for the children which will also include bringing of their children to school. This finding of this study is not in accordance with the study that was carried out in Lagos of which majority (61.6%) of the respondents were males (Olufunlayo et al., 2012). A larger percentage of the respondents (95.2%) had a tertiary education. This suggests that more of the parents who enroll their children in the private school might have had the privilege of attaining a higher education and are expected to know more. This is not supported with a study conducted of which 46.2% of the respondents had a tertiary education (Olufunlayo et al., 2012).

Most of the driving of children 59.6% was reported to be done by the husbands invariably the males which is because it is a cultural expectation that men should drive their wives of which women show interest later in driving. This study supports the finding in a study carried out (Tolulope Funmilayo 2012) of which 67.5% of the males did most of the driving.

5.2 Respondents' Knowledge on Placement of Under-5 in Front Seats of Vehicles

Another major finding from this study was that only about half of the respondents (50.7%) knew about the correct placement of under-5 in seats of vehicles. This may be attributed to some of them not having access to technical knowledge on placement of under-5 in front seats of vehicles either from their formal training institutions or from regulatory agencies. This in accordance with a study conducted of which Abrogast et al., (2000) reported that research has shown that majority of adults may not have the awareness, the skill, or the motivation to correctly use the right size of specialized restraint while transporting a child but may be seen practicing them as a result of experience encountered or shared with them by friends or relatives as regards correct placement of children in vehicle seats.

To further explain the level of knowledge in which the respondents displayed, only 30% agreed that they knew the law on child safety seats and seating position of which when asked to state the law, only 2.6% of the respondent were able to state the law. This implies that despite some of them knowing about the existence of the law, the details of such law were not well known to them and this may be as a result of the law not being enforced in the country. This finding is also similar to a result form a study carried out by Melissa (2013) in regional Queensland of which out of 118 respondents who agreed to know the law, only four parents (3.4%) gave an accurate details of the law and this was viewed as a result of the law not being enforced. The law on placement of children between the age of 1 and less 13 years at the rear seat in the vehicle is just on paper but it's not being enforced.

5.3 Respondents' Perception on Dangers or Consequences of Placement of Under-5 in Front Seats and without Restraint in Vehicles

In this study, the respondents' perception on dangers or consequences of placement of under-5 in front seat and without restraint in vehicles was good (86.3%). This could be as a result of what they might have experienced, what they might have known maybe from friend's experience or encounter or what they might have observed as regards dangers in placing of under-5 in front seats of vehicles. The kind of perception which an individual has cannot conclude if an individual will perform correct placement practices of Under-5 in vehicle seats as this was shown

when the association between perception of the respondents and the practice of correct placement of Under-5 was tested. There was no statistical association between the variables (P= 0.196). To support this finding, Melissa (2013) stated that over 70% of respondents who thought that their child would not be badly hurt in the event of a crash were reported not to have appropriately placed their child well at the rear seat of the vehicle and restrained.

5.4 Respondents' Practice of Placement of Under-5 in Front Seats and Use of Age-appropriate Restraint Seats in Vehicle

The study shows that more than half of the respondents (66.7%) had a good practice on placement positions of under-5 in seats of vehicles. The reason for the good placement practices may be due to the fact that respondents might have watched others parents or drivers correctly placing their under-5 well in the vehicle seats and also making use of the age-appropriate restraint seats while driving. Although from the observation carried out in the study, 77.0% of the respondents were observed to have placed their child at the back seat but not exactly at the middle of the back seat which is the safest placement position of a child in the vehicle while driving. This implies that despite the placement practices are good; it does not mean that knowledge on placement of under-5 in front seats of vehicle will be high since the placement positions of under-5 in the vehicle seats being practiced were not accurately done. This is similar to research that was carried out by Olufunlayo, (2012) which also reported that the respondents had poor knowledge but a good placement practices of children in vehicle seats. Although when practice as regards correct placement of Under-5 in front seats of vehicles was associated with knowledge of placement of Under-5 in front seats of vehicles, there was no statistical association between the variable (P=0.196). This implies that the level of knowledge of the respondents may not really have an influence on their practice.

5.5 Perceived Factors Influencing Correct Placement Practices of Under-5 and Use of Age-appropriate Restraint Seats in Vehicles

A major striking perceived factor highlighted by the respondents (52.2%) that hinders correct placement practices of under-5 and use of age-appropriate restraint seats in vehicles is child objecting to be restrained. This may be because of the child's perceived comfort of sitting in the

front seat where it would be possible for the child to view a lot of things around. This finding is in line with the result from a study of which 7.9% of the respondents reported child objecting to be restrained.

Although cost was mentioned by a few respondents (31.1%) during the survey, the principal investiagator however has the inclination that many of them are not coming out with the issue of cost as a constraint, may be because of their self esteem in which they may be perceived as having money to purchase a vehicle without having money to buy a restraint seats. During part of the discussion outside the survey, some respondents indicated the issue of cost of the restraint seats to be used for the under-5 in the vehicle while driving. This might be due to the fact that most of them are wealthy since they could afford a vehicle or even more for themselves and family. This is not in line with the findings from a study that was conducted by Mellisa, (2013) which reported that there was a greater number of parents who believed child restraints were too expensive than those who did not believe they were too expensive. However, most parents who perceived a high cost for child restraints still had appropriate restraint practices. This suggests that while some parents perceive the cost of restraints as too high, most parents are still willing to invest in the appropriate child restraint for each child in their care. In light of the costs involved, children from economically disadvantage families are at greater risk while travelling, as these parents cannot afford the procurement and maintenance of the safety device. Again, it has been well established that, even children from high social backgrounds are equally at risk, as their parents often find it difficult to choose and use an appropriate child restraint (Road Safety Observatory, 2014). Parents should also be offered technical support in choosing age-appropriate child restraints and educated on their correct usage.

5.6 Implication of the study findings for Health Promotion and Education

Health promotion and education is said to be a combination of educational and environmental supports for actions and conditions of living conducive to health. This study has brought about one or more issues that require health promotion and education strategies which include public enlightment, training community mobilization and organization, advocacy, Resource linking, social marketing etc. The strategies will be targeted at key stakeholders of interest to the study.

Children: Owing to the lack of knowledge that was found out in the study, increasing awareness generally is a major intervention to embark on as regards placement positions of under-5 in vehicle seats.To increase awareness of placement positions of children in vehicles seat, it is encouraged to start from the child so has to achieve sustainable interventions. The education of the children has to be done considering the peculiar characteristics of the various groups that makes up the children as a whole of which are the playgroups, primary, secondary and tertiary settings. The children setting of focus in the study is the under-5 similarly related to the playgroups and the education of this setting should carried out by the health promoters and school health specialist of which they must be familiar with their peculiar characteristics to be able to work with them effectively. The education or training of children should be in the form of rhymes, pictures, stories, dramas on correct placement positions of children in vehicle seats in order to captivate their attention in the education or training that will be carried out. The education of the children as regards placement positions in vehicle should be encouraged to be made part of the curriculum in schools so as to instill better learning practices. The importance of the education to children is to instill a better practice behavior and of which they can assist in educating their peers and even their parents and community as a whole.

Parents: Parents are seen to be a motivating or influencing factor for the children. Therefore, increasing parents' awareness on placement positions of children, especially under-5 in vehicle seats goes a long way to instil correct placement practices and the use of age-appropriate restraint seats in vehicles in the children and society at large. Health professionals and promoters should be familiar with the type or form of education that should be given to the parents which will make it captivating for them to receive and also become educated. Some of which are media programs, advertisements, peer education, use of education and Communication (IEC) materials on placement positions of children in vehicle seats and use of age-appropriate restraint seats. The details of the various education programs targeted towards the parents should be encouraged to make more emphasis on the risks involved in placing of children in front seats and not properly restrained in the vehicle seats which could enhance their placement practices.

Enforcement agencies: Although, there are laws on the book as regards placement of children in vehicle seats and use of age-appropriate restraint seats but it's not being enforced. The enforcement agencies are seen not to enforce the laws and this could be due to the fact that the

awareness on placement positions of children in vehicle seats among the various agencies may be very low. Therefore, educational campaigns among the enforcement agencies (FRSC and PSTA) should be encouraged of which they should be familiarised with the correct details of placement positions of under-5 in vehicle seats. The agencies could also assist in collaboration with the government, health educators and promoters to mobilize communities in making of public enlightment campaigns as regards placement positions of children in vehicle seats. This should be done in order to raise awareness in the society at large.

Government: To increase awareness of placement positions of under-5 and use of age-appropriate restraint seats in vehicles, the government should be made to re-amend the policies or make a standard legislation that will not only be in the books but strictly adhere to in order to increase its awareness among people. There should be organising of agenda setting and advocacy for healthy public policy that is to say policies for health as regard placement positions of children and use of age-appropriate restraint seats in vehicles. Government should make available through social marketing various restraint seats in the markets and also enforce manufactures of motor vehicles to produce restraint seats alongside with vehicle production in order to make restraint seats available and accessible. Also, instructional manuals of how to use the restraint seats should be added when packaging of the vehicle after manufacture.

5.7 Conclusion

According to World Health Organisation (WHO, 2008), motor vehicle accident (MVA) injuries are leading cause of death and disability in children in both developed and developing countries and account for 22.3% of all child injury deaths globally. Globally, more than 85% of casualties and 96% of child deaths from road traffic accidents occur in low and middle income countries.. Reliable data on MVA-related disability in children are sparse. The main objective of placement of Under-5 in rear seats and use of age-appropriate restraint seats is to promote health of children and which has a wide range of benefits which is to reduce greater percentage mortality and morbidity rates among infants and children in general (Bohman et al., 2006). The study has helped to reveal that there is poor knowledge of placement of Under-5 in front seats and age-appropriate restraint use in vehicles among parents which has not provided a very good practice towards placement positions. Therefore, awareness creation should be increased as regards

placement positions and use of age-appropriate restraint seats in vehicles. With the level of practice shown by the parents in placing of their child at the rear seat, they have a low practice as regards the exact placement position at the rear seat and also the use of age-appropriate restraint seats. Hence, for the optimal protection of children, it is essential for a child from birth up to 12 years of age to be seated at the middle of the rear seat and appropriately restrained in the vehicle.

5.8 Recommendations

In view of the findings of this study, the following recommendations are made:

1. The study revealed a low knowledge of placement of Under-5 in front seats and use of age-appropriate restraint seats in vehicles which is associated with lack of information and education on proper placement position of children in vehicle seats among parents. To address this issue, education awareness should be directed at elevating the understanding of parents concerning the importance of properly placing and restraining of younger children in the rear seats which is made possible by providing appropriate Information, Education and Communication materials that contain messages that specifically address the issue; the IEC materials should contain information on proper placement position and use of age-appropriate restraint seats use in vehicles so that parents can have adequate knowledge on the risk and benefits associated with proper placement of children in vehicle seats and use of age-appropriate restraint seats.
2. For the children, educational based activities targeted towards placement positions of under-5 in seats of vehicles and use of age-appropriate restraint seats should be inculcated as part of their curriculum in the school.
3. The study revealed that there is a law on placement of children in front seats of vehicle but due to non-enforcement of the law, it is assumed that there is no law. To address this, effort should be made by the government to amend the law and enforcement of the law should be enhanced and strictly adhered to. Fine should be given to anyone found guilty and this should be done in a consistent manner. In addition, the law on the use of age-appropriate restraint use is not seen to have been enacted upon. Therefore, efforts should be made to create the law if not created by the government with the assistance from the Federal Road Safety Commission in order to provide law enforcement campaigns.

4. Age-appropriate restraint seats should be made available to parent at subsidized rates in the markets or preferably free of charge within their place of reach and a proper maintenance culture should also be instigated to facilitate, enhance and ensure usage of the restraint seat in vehicle while driving their children. This should be done to encourage those willing to begin the use of age-appropriate restraint seat.
5. Stakeholders like the manufactures of the restraint seats should be encouraged to make the manuals or instructions being kept in a packaged restraint seat as simple as possible for the parents to correctly understand guidelines as regards placement position and the use of age-appropriate restraint seats while driving of their children.
6. Advocacy and effective campaigns that will increase the level of knowledge and raise the level of awareness should be embarked upon by health promoters.

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APPENDIX I

QUESTIONNAIRE

KNOWLEDGE AND PRACTICE OF PLACEMENT OF UNDER-5 IN FRONT SEATS OF VEHICLES AMONG PARENTS IN IBADAN NORTH LOCAL GOVERNMENTAREA, OYO STATE

Dear Respondents,

My name is **DIRI NMERI VICTORIA,** a Postgraduate Student of the Department of Health Promotion and Education, Faculty of Public Health, College of Medicine, University of Ibadan. The purpose of this study is to investigate the **KNOWLEDGE AND PRACTICE OF PLACEMENT OF UNDER-5 IN FRONT SEAT OF VEHICLES AMONG PARENTS.** The findings from this study will help in the design of programs and formulation of policies aimed at encouraging safety behaviors in promoting children placements in car seats. Your identity, responses and opinion will be kept strictly confidential and will be used for the purpose of this research only. Please note that you do not have to write your name on this questionnaire, also try and please give honest answers to the questions asked as much as your maximum co-operation will assist in making this research a success.

Consent:

Now that the study has been well explained to me and I fully understand the content of the study process, I hereby agree to take part in the study.

Signature/thumbprint _____ Date_____

Would you want to participate in the study? (1) YES { }(2) NO { }

Thank you very much.

Important Instruction(s): Please Do Not Write or Supply Your Name

Section A: socio-demographic characteristic

Instructions: In this sections please tick (√) in the appropriate boxes that correspond to your answers or complete the spaces provided below.

1. Gender: 1. Male { } 2. Female { }

2. Age as at last birthday in years: _____

3. Marital status: 1.married { } 2.single { } 3.divorced {} 4. Cohabiting { }

4. Occupation _____

5. Religion: 1.Christianity { } 2. Islam { } 3.Traditional { } 4.others _____

6. Ethnicity 1. Yoruba { } 2.Igbo { } 3.Hausa { } 4.Others (specify) _____

7. Level of education: 1. Primary { } 2. Secondary { } 3. Tertiary { }

8. How many children are you blessed with _____

9a.Who does most of the driving of your children? _____

b. Do you have any child between the age of 0 and 5 years? YES ( ), NO ( ).

If YES, what is the age of the child? _____ and the class of the child _____

SECTION B: knowledge of correct seat placement position and age-appropriate restraint for under-5

S/N	KNOWLEDGE QUESTIONS	
10.	What does child safety mean to you?	
11.	What do you understand by child safety seats?	
12.	Where is the safest place and seating position for a child to travel in a car?	
13.	Do you know of any child restraint seat? 1.Yes ( ), 2.No ( ) If YES, name them	
14.	Do you know of any consequences in placing of children in front seat of vehicles and not properly positioned in a restraint seat? Yes ( ), No ( ). If YES, highlight any two of them known	
15.	What is the appropriate age to commence the child restraint seats? _____	
16.	What is the age to commence the use the use of seat belt? _____	
17.	What is the appropriate age to commence front seating? _____	
18a	Do you know of any law on child safety seats? 1. Yes ( ), 2.No ( ).	
b.	If YES, state the law. The law states that _____	
19.	Where was the information gotten from? Media ( ) School ( ) Church ( ) Colleagues ( ) Friends ( ) Others, please specify _____	

Section C: Perception on dangers or consequences of placement of under-5 in front seat and without restraint in Vehicles

27. How badly do you think your child can be hurt if involved in a crash?

S/N	PERCEPTION STATEMENTS	AGREE	DISAGREE	UNDECIDED
19.	I do not think I can be involved in a vehicle crash while I am driving.			
20.	I do not think my child can be injured in the course of a crash even when in the vehicle with me.			
21.	I think restraining my children would protect them from injury in a crash while driving.			
22.	I think placing my children in an age-appropriate restraint seat would protect them from death in a crash while driving.			
23.	I think children are just as safe in the front seat as in the back seat			
24.	I do not have airbags in my car; therefore placing my child in the front seat would not constitute any danger to the child.			
25.	I believe that my children cannot be injured in a crash because I drive carefully	.		
26.	I consider child restraints to provide better protection in a crash than adult seat belts for children			

(a) No injury ( )

(b) Minor (treat at home) ( )

(c) Moderate (see a doctor) ( )

(d) Moderate-severe (go to hospital) ( )

(e) Severe (call for ambulance at the crash) ( )

(f) Fatal ( )

SECTION D: Various practices in respect to correct placement of under-5 and use of age-appropriate restraint device in vehicles

S/N	PRACTICE QUESTIONS	1.ALWAYS	2.SOMETIMES	3.NEVER
28.	I place my child at the back seat without a restraint while dropping them off at school			
29.	I place my child in the front seat while driving			
30.	My spouse seats with my child in the front seat while driving			
31.	I place my child in between my knees while driving			
32.	I drive with a restraint seat for my child in the front seat			
33.	I keep my child standing between the two front seat while driving			
34.	I drive with my children in the car anywhere I go to			
35.	I place my child at the back seat with a restraint while driving			
36.	My child uses age-appropriate restraint while driving			

SECTION E: Reasons for not adhering to correct under-5 placement and use of age-appropriate restraint seat in vehicles.

S/N	FACTORS STATEMENTS	1.YES	2.NO	
37.	Child restraint seat are too expensive			
38.	Difficulty in fixing three car safety seats on the back seat of the car if car size is small			
39.	Child objecting to be restrained			
40.	Car safety seats not big enough			
41.	I cannot watch my child closely if placed at the back			
42.	I am not aware of age-appropriate restraint seat for children			
43.	Child restraint seats are not available in the markets			
44.	Child will be lonely at the back if he or she drives with me alone			
45.	Car restraint seats are too difficult to use, so I don't use them.			

THANK YOU

APPENDIX II

OBSERVATION CHECKLIST

THE KNOWLEDGE AND PRACTICE OF PLACEMENT OF UNDER-5 IN FRONT SEAT OF VEHICLES AMONG PARENTS IN IBADAN NORTH LOCAL GOVERNMENT AREA, OYO STATE

INSTRUCTION: To be completed by the interviewer before administering the questionnaire. For filling of boxes that requires a YES or NO answer, If Yes, make a full tick and if No, make a dash (----)

Time Started_____

IDENTIFIERS	
1. Date of visit _____/_____/_____	2. Name of observer: _____
3. Study No: _____	4. Location name : _____
5. Class of the child: _____	6. Name of School:
7. Child's age: Years _____	8. Sex: male ( ) Female ( )
OBSERVATIONS	
9. Vehicle type: _____	10. Driver properly restrained: 1.( )
11 (a) Front seat: ( )	12 (a) Back seat: ( )
(b) Restraint type: Seat belt ( )	(b) Restraint type: Seat belt ( )
Child seat ( )	Child seat ( )
Rear- facing ( )	Rear-facing ( )
Not restrained ( )	Not restrained ( )

Time ended: _____

APPENDIX III

CONSENT FORM FOR PARENTS

THE KNOWLEDGE AND PRACTICE OF PLACEMENT OF UNDER-5 IN FRONT SEATS OF VEHICLES AMONG PARENTS IN IBADAN NORTH LOCAL GOVERNMENT AREA, OYO STATE.

My name is _____ from the Department of Health Promotion and Education, Faculty of Public Health, University of Ibadan. I am carrying out a study on the "Knowledge and practice of placement of Under-5 in Front Seat of Vehicles among parents in Ibadan North Local Government Area, Oyo state''. I will be administering questionnaires through interview sessions. You will also be asked some basic questions as regards placement position of your child in the vehicle. The answers will be kept very confidential or secret. The information given me will be helpful to the Ministry of Health in future to assess the level of knowledge and placement practices of Under-5 in vehicles among parents and inform health policy makers on the need to design programs and formulate policies aimed at encouraging safety behaviours in promoting child placement in vehicle seats (e.g.: availability of restraints seats of affordable price together with programs on child safety seats) targeted at reducing child morbidity and mortality owing to crashes from vehicles, and will contribute to ensuring optimum health of children and the entire public.

You are free to decline to take part in this study. You have the right to withdraw at any given time if you choose. I will appreciate your help in giving your consent to take part in this study.

Consent:

Now that the study has been well explained to me and I fully understand the content of the study process, I hereby choose to take part in the study.

Signature/thumbprint _____ Date_____

Name of witness_____ Signature/thumbprint _____Date

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/ 479/929

July, 2015

The Principal Investigator,
Faculty of Public Health,
College of Medicine,
University of Ibadan,
Ibadan.

Attention: Diri Nmeri

ETHICAL APPROVAL FOR THE IMPLEMENTATION
OF YOUR RESEARCH PROPOSAL IN OYO STATE

This is to acknowledge that your Research Proposal titled: "The Knowledge and Practice of Placement of Under-5 in Front Seats of Vehicles among Parents in Ibadan North Local Government Area Oyo State." has been reviewed by the Oyo state Review Ethical Committees.

2. The committee has noted your compliance. In the light of this, I am pleased to convey to you the full approval by the committee for the implementation of the Research Proposal in Oyo State, Nigeria.

3. Please note that the National Code for Health Research Ethics requires you to comply with all institutional guidelines, rules and regulations, in line with this, 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 findings as this will help in policy making in the health sector.

4. Wishing you all the best.

STATE RESEARCH ETHICAL REVIEW COMMITTEE
Signature & Date

Sofa Akande (Dr)
Director, Planning, Research & Statistics
Secretary, Oyo State, Research Ethical Review Committee