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DETERMINANTS OF HEALTH AND SAFETY CONDITIONS OF EARLY CHILDHOOD CARE AND DEVELOPMENT CENTRES IN CAPE COAST METROPOLIS, GHANA



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Thesis submitted to the Department of Health, Physical Education and Recreation of the Faculty of Science and Technology Education, College of Education Studies, University of Cape Coast, in partial fulfilment of the requirements for the award of Doctor of Philosophy degree in Health Promotion (Maternal and Child Health)

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Candidate's Declaration

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

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Supervisors' Declaration

We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's Signature Date . Name: Prof. Joseph Kwesi Ogan

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Name: Dr. Charles Domfeh

Ghana has an obligation to ensure that children grow, survive, develop and receive protection through the establishment of Early Childhood Care and Development (ECCD) services. The quality of care provided to children in any kind of ECCD centre is very important in that the higher the quality of care the better the developmental outcomes. The purpose of this explanatory sequential mixed methods study was to assess the health and safety conditions of ECCD centres in Cape Coast Metropolis (C.C.M.) of Ghana and identify the determinants of these conditions. Data was collected from all the 160 ECCD centres, all 160 ECCD centre Heads and all 462 ECCD teachers. Eight Heads and eight teachers were also interviewed. Descriptive statistics showed that physical environment of ECCD centres in C.C.M. was of a fair quality. ECCD centres met most of the health and safety practices. However, two themes were identified as explanations to why play yards in ECCD centres were not good: "Funds" and "Government". The theme identified as explanation to why centres were not requiring copies of doctor's reports was: "We don't bother to ask". Four themes identified as explanations to why hand sanitizers were not used were: "Water and soap", "Expensive", "Teachers have" and "Some children have". Chi-square analysis revealed that private ECCD centres were likely to meet recommended health and safety practices. Four themes came up as explanations to why private centres were better: "National cake", "For profit", Nice facility" and "Responsible parents". In explaining why specialized training in ECCD was not associated with health and safety practices, three themes came up: "Desire", "A calling" and "Skill". Implications for best practices, conclusions and recommendations were made.

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I wish to express my sincere gratitude to my supervisors, Prof. Joseph Kwesi Ogah of blessed memory and Dr. Charles Domfeh both of the Department of Health, Physical Education and Recreation, for their guidance, advice, encouragement and the goodwill with which they guided this work to a successful completion. I am very grateful.

I am also grateful to Dr. Pius Hope Nudzor of Institute of Educational Planning and Administration (IEPA), for his suggestions and generous contributions towards this work. I wish to acknowledge with gratitude my indebtedness to my family for their support, especially, my husband, Rev. Kwesi Amissah-Essel and my mother, Mary Aidoo. To them, I say a big thank

you.



DEDICATION

To my lovely daughters; Emmanuella and Irene Baawa Amissah-Essel



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CHAPTER ONE

INTRODUCTION

Early Childhood education in Ghana dates back to the colonial years where in 1745, the Christian missionaries established the first educational programme which included young children (Morrison, 2001). An Early Childhood Care and Development (ECCD) programme that is not of a good quality places the children under a greater risk for infectious diseases, injuries and poor nurturing hence the need to know the health and safety conditions of ECCD centres and find out the determinants of these conditions. If we also explore the reasons why ECCD centres are in such conditions, we can gain a deeper understanding, and to gain a deeper understanding is a crucial first step towards providing an ECCD programme that ensures that children develop physically, socially, emotionally and cognitively. This chapter presents the background to the study, statement of the problem, purpose of the study, significance of the study, delimitations and limitations of the study. The chapter also presents the definition of terms and organization of the rest of the thesis.

Background to the Study

Defining childhood and early childhood comes from the understanding of who a child is considered to be. Convention on the Rights of the Child Article 1, defined a child "as every human being below the age of 18 years unless, under the law applicable to the child, majority is attained earlier" (UNICEF, 2007, p. 1). This definition is not specific on the age at which childhood starts

and ends, but it gives room for a minimum age to be set based on different circumstances while taking into consideration the needs of the developing child and the quest of a nation to protect the child. However the definition recommended the age 18 to be the upper age limit of childhood.

In defining early childhood, the Committee on the Rights of the Child stated that:

In its consideration of rights in early childhood, the Committee wishes to include all young children at birth and through infancy; during the preschool years; as well as during the transition to school. Accordingly, the Committee proposes as an appropriate working definition of early childhood the period from birth to the age of 8 years. (UNICEF, 2007, p.

3)

Early childhood is a crucial time period for establishing firm foundations necessary for child survival, growth and development as the child adapts to the environment. It is a stage of fast development in the child's body biological systems as well as the brain. As these systems develop during early childhood, the child's environment and experiences influence the immediate development as well as later functioning in life. A research by the Harvard's Centre on the Developing Child found that by the age of five, 90% of brain development occurs and from Figure 1, the research established the fact that in every second of a child's life during the early years, 700 neural connections are created (Ministries of Education, Health and Human Development, Belize, 2017).

According to the Ministries of Education, Health and Human Development, Belize (2017), a child's early experiences help form the architecture of the brain and set the foundation for the child's lifelong success and so positive outcomes are likely to obtain if the child's calify experiences are positive but if the experiences are negative then negative outcomes are likely to happen. Positive experiences comprise quality nutrition, sensory and motor stimulation, nurturing relationships and protection offered by family members or caregiver (United Nations Children's Fund [UNICEF], 2017).



Figure 1. Neural Connections Formation, Birth through Age Two (Harvard, 2017)

Source: Ministries of Education, Health and Human Development, Belize (2017)

Levitt (2016) also asserted that a child's experiences especially the interactions with adults, who care for him or her, are very important as these interactions help build the brain and thereby strengthen the child's cognitive, emotional and social development. Shonkoff *et.al.* (2012) indicated that a child's exposure to negative experiences such as neglect, pollution, stress, violence and disease can affect the way neural connections are formed in the brain. The main function of the brain is to give interpretations and regulate

© University of Cape Coast https://ir.ucc.edu.gh/xmlui behavioural, neuroendocrine, autonomic, and immunological responses to bad events.

Empirical and observational research works which formulated theories like Sigmund Freud's psychoanalytic theory, John Watson's behaviourism, Jean Piaget's cognitive development theory, Erik Erickson's psychosocial theory, Arnold Gesell's maturational stage theory, John Bowlby's attachment theory, Urie Bronfenbrenner's ecological theory and Arnold Sameroff's transactional theory, formed the theoretical bases for recognizing the significance of childhood and the responsibilities of both family and society towards the development of the growing child (Armstrong, Ogg, Sundman-Wheat & St. John Walsh, 2014; Kennedy & Kennedy, 2004; Thelen & Adolph, 1992).

Environmental health is of concern especially as the most vulnerable in society such as children are disproportionately exposed to health risks from environmental hazards which eventually affects their health. The World Health Organization (WHO, 2017) has reported that in each year, 1.7 million children under age five die as a result of polluted environment. Annually, 570,000 children under age five die from respiratory infections, including pneumonia, 361,000 die as a result of diarrhea, 270,000 die due to neonatal conditions including prematurity, 200,000 also die of malaria and another 200,000 die due to unintentional injuries such as poisoning, burns, drowning and falls.

For children to survive and have a healthy development, they depend on parents and other caregivers to meet their physical and psychological needs. These persons determine, among others, the quantity and quality of the food

the child takes in, the health care the child receives, as well as the amount of emotional support the child receives on daily basis and during times of stress, such as illness. The child's growth and development also depends largely on the capacities of the people taking care of them to give the appropriate response to the child's needs.

Care, is defined as the practices and behaviours exhibited by caregivers such as mothers, fathers, siblings, and child care providers as they nurture and support the children emotionally, feed them and give health care needed to ensure that the children remain healthy and grow well (Engle & Lhotska, 1999). They explained further by saying that it is not only the practice themselves that are of concern but how the practices are carried out, in terms of fondness and how quick and effective they respond to the child's needs. Hence, care giving is one of the key determinants when it comes to quality of the child's environment.

Interaction between the child and the environment is also a key factor for child development. According to Bee (2000), there are five major principles concerning the relationship between a person and the environment. The first principle is that there are individual differences in reactivity to the environment. This implies that different children react differently to the environment with some being more sensitive to change and others less. These differences in sensitivity may be a result of accumulated past experiences or differences in temperament.

The second principle talks about the fact that there is a two-way interplay between children and their environment. The third principle suggests a need to adopt an ecological framework. This is because events occur inside the

framework of the relatives and the larger society. These contextual factors play a role in determining the effect of experiences on children. The fourth principle is the subjective meaning of experiences. This means that it is children's perception of the meaning of their experiences that determines the effect of the experiences and not just the experience itself. This also means that, depending on children's interpretations and understanding of events, the same experience may have different effects on different children.

Finally, children are active recipients of environmental forces. Children act on the environment as they choose their friends and their behaviour, which might consequently influence their own environment. According to Halfon and Hochstein (2002), quite a number of the early life experiences are related to developmental outcomes later in life and that the experiences humans go through in life are programmed, throughout development, into biological and behavioural systems' structure and functioning. So, the changes in functional status (such as physical functioning, cognitive functioning and social or emotional functioning) over time are conceptualised in terms of trajectories of development.

Coe and Lubach (2003) compared the evolving health status of a child during the early childhood period to how a rocket is launched; little distraction that occurs moment after take-off will be capable of having a big effect on its ultimate path. So, accordingly, if a child does not receive appropriate stimulation from a caregiver in the early years or later at school, it is likely that impaired cognitive development in the early years will be amplified over time (Jukes, 2005). Scientific research findings have also revealed that a lot of the general chronic diseases in adulthood are associated with practices and © University of Cape Coast https://ir.ucc.edu.gh/xmlui experiences that have taken place years before, and in some instances as early as prenatal stage (Shonkoff & McEwen, 2009; Guyer *et al.*, 2009).

In order to improve on overall child survival, development and long life from early childhood, evidenced-based framework on seven concepts of development was proposed by the National Scientific Council on the Developing Child in 2007. The first concept states that, for a strong foundation to be built for success over the life course well into the adult years there is a need for early growth of cognitive and social abilities as well as sound emotional, physical and mental health. The second concept talks about the fact that brains are constructed overtime. The structural design of the brain is put up as a result of continuous procedure that starts before birth through to adulthood, and determines the probability of good outcomes or rather increases the chances of problems later in life in relation to health, learning and behaviour. The third concept which was taken into consideration was the fact that the relationship between the genes and experiences actually forms the architecture of the growing brain, and this is affected by the kind of responsiveness that exists between the child and adult, especially during early childhood.

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The fourth concept talks about the fact that both the brain construction and growing abilities are formed in a hierarchical order. Simple paths and skills are developed from the bottom and as it gets to the top, complex and adaptive skills are also formed. The fifth concept is that over the course of life, social, cognitive and emotional capacities are entwined, and there is also an interrelationship between physical and mental health, learning and behaviour. The next concept says that even though there are some levels of stress which

promote growth, stress that is toxic (such as physical disruptions that causes an exposure to harsh conditions due to absence of adult protection) can harm the developing brain and other body systems leading to increased susceptibility to illness as well as lifelong problems in social relationships and learning. The seventh concept also talks about the fact that it will be more effective and not too costly to society if the correct conditions for early childhood growth are created rather than addressing problems at a later age. Therefore it is worth the cost if investments are made into early childhood development.

Historical studies show that the expansion of early childhood care and education seems to have been as a result of the first industrialization requiring female labour force (Chartier & Geneix, 2006). According to Sivard (1985), one of the most significant trends during the 1980s in developing countries, was the numerical increase of women that joined the working force. This increase in women involvement in formal and informal employment created difficulties in balancing traditional child care responsibilities and engagement in income-earning activities which was also important. In Latin America, Asia and Africa, women's involvement in formal income earning activities placed pressure on them to increase the usage of available child care options, which ranged from sibling care to enrolment in child care centres and crèches (Myers & Indriso, 1987).

The National Research Council (2001) noted that a number of children take part in an early education programme made available in a preschool setting before attending a school and further explained that preschool, child care and nursery school programmes are usually identical in their activities.

Early childhood care and education aims at supporting children from birth till entry into primary school to survive, grow and development. Choi (2002) explained that the word "education" during the early childhood has a bigger meaning than just attending a pre-school. It captures education through early stimulation, assistance and a variety of developmental activities. Education and care are inseparable in practice because as young children are provided with good quality condition during the early years, both dimensions will be addressed.

Statement of the **Problem**

Health and safety of children is very important especially during early childhood periods where there is great vulnerability (WHO, 2018). Evidence exists to the fact that a child's exposure to negative experiences such as neglect, pollution, stress, violence and disease can affect the way neural connections are formed in the brain (Shonkoff *et al.*, 2012). Research has also indicated that quite a number of the early life experiences a child goes through, are related to developmental outcomes later in life (Halfon & Hochstein, 2002). This implies that whatever negative health condition a child suffers may have detrimental effects on the child as he or she grows.

Ghana, as a nation, has an obligation to ensure that children grow, survive, develop and receive protection through the establishment of Early Childhood Care and Development (ECCD) services. This responsibility arises from the creation and existing national laws, which include Article 28 of the 1992 Constitution that mandates the Government to ensure the rights of the child. The Children's Act (Act 560, 1998) demonstrated Ghana's commitment to the promotion of the physical, mental and social well-being of the Ghanaian © University of Cape Coast https://ir.ucc.edu.gh/xmlui child. Bye-laws of Metropolitan, Municipal and District Assemblies also address specific child-related problems in their areas (Republic of Ghana Ministry of Women and children's Affairs, 2002).

According to Aber, Wolf and Behrman (2016), the World Bank Group report in 2015 indicated that, Ghana has made great progress in early childhood education in comparison to other African countries. There was evidence of enrolment rising and that between the years 2002-03 and 2011-12, the preschool gross enrolment rate went up from 21.8% to 112% with net enrolment going up from 19% to 70%. These significant increases in enrolment have exceeded the national goal for pre-primary school enrolment established in the Education Sector Strategic Plan for 2003-2015, which was 75% by 2015 (UNICEF, 2011).

As at 2013/14 academic year, the 2015 target of 100% for gross enrolment ratio for kindergarten had been exceeded (123%) while that of net enrolment ratio which was set at 90% for 2015 had also been exceeded slightly (91%) according to the 2013/14 academic year EMIS data (UNESCO, 2014). This gives an indication that the use of ECCD centres in Ghana has increased.

Parents, for many reasons related to work or inconveniences are left with no option than to leave their children in the care of an ECCD centre with the hope that the staff and people at the centre will take good care of their children. As a worker and a mother living in the Cape Coast Metropolis of Ghana, I personally was concerned about which ECCD centre to send my child, where she would be taken good care of and kept safe. My interactions with other parents who had experienced ECCD centres in the Cape Coast

© University of Cape Coast https://ir.ucc.edu.gh/xmlui Metropolis, brought fear to me as I heard of some of the serious health and safety issues at some of the ECCD centres. These included infections, negligence and even in one case the death of a child.

The U.S. National Association of Child Care Resources & Referral Agencies [NACCRRA], 2007, has indicated that to ensure the health and safety of children in ECCD centres, the standards and recommendations that are considered important to be followed, including hand washing, diapering, meals or food preparation, immunizations, written health and safety policies as well as a healthy physical environment. A lot of research works have focused on the aspects of childcare that are regulated such as the ratio of the number of children per caregiver, group size and caregiver education and or training. But there is a research gap on the physical aspects of the childcare setting.

Apart from some few studies in Ghana which looked at infection control practices in preschools, preschool infrastructure and physical environment of preschool for the deaf in Cape Coast, none of the studies combined these four variables: quality of physical environment, health and safety practices, centre characteristics and teacher characteristics in one study. Therefore the current study examines uniquely the quality of physical environment, health and safety practices, centre characteristics and teacher characteristics of ECCD centres in the Cape Coast Metropolis.

Purpose of the Study

The purpose of this explanatory sequential mixed methods study was to assess the health and safety conditions of Early Childhood Care and Development (ECCD) centres in the Cape Coast Metropolis of Ghana and to identify the determinants of these health and safety conditions.

© University of Cape Coast https://ir.ucc.edu.gh/xmlui Research Questions

The study aimed at finding answers to the following questions:

- What is the quality of the physical environment of ECCD centres in Cape Coast Metropolis?
- 2. What are the health and safety practices of ECCD centres in Cape Coast Metropolis?
- 3. To what extent are centre characteristics (auspice status of the centre whether public or private) associated with quality of the physical environment of ECCD centres and health and safety practices in ECCD centres in Cape Coast Metropolis?
- 4. To what extent are teacher characteristics (specialized training in ECCD and teacher-to-child ratios) associated with health and safety practices in ECCD centres in Cape Coast metropolis?
- 5. How does the qualitative follow-up data help to better understand the quantitative results?

Hypotheses

While the first two research questions were clearly descriptive and, thus, no research hypotheses were formulated, research question five applied to all the four research questions. The following hypotheses specified the researcher's expectations regarding research questions three and four.

 There is a relationship between centre characteristics (auspice status of the centre whether public or private) and quality of physical environment (fair, good or excellent) of ECCD centres as well as health and safety practices in ECCD centres in Cape Coast metropolis.

2. There is a relationship between teacher characteristics (specialized training

in ECCD and teacher-to-child ratios) and health and safety practices (standard met or standard not met) in ECCD centres in Cape Coast metropolis.

Significance of the Study

The study provides evidence of the state of affairs in ECCD centres in the Cape Coast Metropolis of Ghana, which includes failures and successes of these centres in meeting the health and safety needs of children in their care. The findings of this study will help the Cape Coast Metropolitan Assembly to target public expenditures and interventions towards the identified problem areas and further research can be conducted in the identify areas. This study is also a source of information to policy makers and other stakeholders such as parents, teachers or caregivers as well as health educators about the complex health and safety needs of children in ECCD centres in the Cape Coast Metropolis of Ghana.

Delimitations

The study was delimited to ECCD centres in the Cape Coast Metropolis of Ghana. It was also delimited to quality of the physical environment of these centres as well as health and safety practices at the centres. The determinants of health and safety conditions of these centres was delimited to centre characteristics (auspice status of the centre whether public or private) and the teacher characteristics (specialized training in ECCD and teacher-to-child ratios).

The Children's Physical Environment Rating Scale (CPERS) was used to assess the quality of the physical environment of these centres and

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questionnaires were used to assess health and safety practices at the centres followed by in-depth interviews of some selected Heads and teachers. Data analysis was delimited to IBM SPSS Statistics software version 20 and computer-assisted qualitative data analysis software (CAQDAS) called NVivo 11 Plus.

Limitations

The nature of the study presented some limitations. First, not all health and safety standards have been captured in the study. However, this does not affect the findings of the study. Second was the possibility of teachers and Heads of centres not providing accurate information regarding their health and safety practices because it would have exposed them if they were not doing what was expected of them. This behavioural sensitiveness was likely to have relative potential impacts on the validity and generalization of the research findings as the respondents could respond to the items half-heartedly and not truthfully.

But having envisaged this, I assured the centres and respondents of anonymity and names of centres and respondents were not required. They were also assured that all information provided was strictly for academic research purposes. The explanatory sequential design of this study came with some difficulties as it was time consuming and labour intensive and also required expertise in collecting and analysing both quantitative and qualitative data. I acquired this expertise and ensured that all the processes used in conducting this study were valid and trustworthy.

© University of Cape Coast https://ir.ucc.edu.gh/xmlui Definition of Terms

Early Childhood Care and Development (ECCD) centre: refers to any type (i.e. public, private or voluntary) of preschool childcare provision that is subject to a national regulatory framework.

Centre Auspice: refers to the ECCD programme's funding source (i.e., private or public).

Children's Health: takes into account their special characteristics particularly rapid development during childhood and the multiple influences that interact over time in different ways as children develop and change. Children's health is therefore determined by the interaction of a multitude of influences such as children's biology and behavior; their physical environment; social environment; services and policy.

Physical Designed Environment of ECCD Centre: is defined as the size, density, privacy, activity settings, modified open-plan space, technical design features and the quality of outdoor play spaces.

Safety: generally refers to aspects of the environment that contribute to health, including the physical environment (e.g., absence of toxins or pollutants in ground water, use of car seats and bicycle helmets), social environment (e.g., low neighborhood crime rates, low rates of risky behaviors either by the children or adults), and psychological environment (e.g., the perception of not being in personal danger).

Teacher characteristics: refers to the teacher having specialized training in ECCD and teacher-to-child ratios.

Organization of the Study

This study was organized as follows: Chapter One constitutes the

introductory part of the study. It comprised the background of the study, statement of the problem, purpose of the study, the research questions, hypothesis, and significance of the study, delimitation of the study and the organization of the study. Chapter Two presents the review of related literature. Chapter Three presents the research methods employed in the study. Chapter Four is the results and discussion. Chapter Five presents the summary, conclusions and recommendations based on the findings of the study.



CHAPTER TWO

The purpose of this explanatory sequential mixed methods study was to assess the health and safety conditions of Early Childhood Care and Development (ECCD) centres in the Cape Coast Metropolis of Ghana and to identify the determinants of these health and safety conditions. To this end literature was reviewed on the following sub-headings;

1. Theoretical Framework and Conceptual Base of the Study

- 2. Concept of Childhood and Early Childhood
- 3. The Biology of Health in Early Childhood
- 4. Research on Quality Early Childhood Care
- 5. Research on ECCD Care Giver / Teacher Characteristics
- 6. Research on ECCD Care Giving Environment
- 7. Research on Health and Safety Practices in ECCD Centres
- 8. Research on Health and Safety Standards' Compliance in ECCD Centres
- 9. Research on ECCD Centre Characteristics
- 10. Research on Quality of Physical Environment of ECCD Centres
- 11. Early Childhood Care and Development Provision in Ghana

Theoretical framework of the Study

Theories are needed in research studies because they provide ideas and directions on how a particular phenomenon can be studied. In recognising the importance of theories, Nelson (2005) asserted that theories do the task of

bringing out empirical knowledge which assists in providing better understanding. There are several theories of child development perspectives such as those from psychology, linguistics, neurobiology, and evolutionary theory that have testified to the importance of the experiences in the first years of life of a child. But the theoretical viewpoint of this study is on the ideas and tenets of the bio-ecological theory, the interactional-constructivist theory of child development and the environment, the health influences model and the model of early childhood development.

Bio-ecological model of human development

This is a model which demonstrates development as an on-going process throughout life, which is affected by close relations and the environment. The individual's development is seen as a process based not only on biological development, but also on the social systems at different levels embracing him or her throughout the course of life and across generations. Urie Bronfenbrenner developed the ecological systems theory to explain how everything in a child and the child's environment affects how a child grows and develops (Bronfenbrenner & Morris, 2006). It notes the bidirectional nature of interactions between the individual and the context in which they develop.

An individual's dispositions, aptitudes, and demands on the environment all shape the course of their development. Changes in life events can be imposed on the child, or arise from the child as they themselves select, create and modify their own experiences. And so according to this approach, the child's development is influenced by the child's biological characteristics (what is innate to the child), his or her immediate environment, and the

© University of Cape Coast https://ir.ucc.edu.gh/xmlui broader physical, socioeconomic and cultural context in which the child lives (what is acquired after birth).

All of these contexts are closely interrelated and also influence one another. Each child's special genetic and biologically influenced personality traits, what is known as temperament, ends up affecting how others treat them. Bronfenbrenner, labelled different levels of the environment that influence children's development as the microsystem, mesosystem, exosystem macrosystem and the chronosystem (figure 2). The microsystem is the small, immediate environment the child lives in. Children's microsystem will include any immediate relationships or organizations they interact with, such as their immediate family or caregivers and their school or day care.

How these groups or organizations interact with the child will have an effect on how the child grows; the more encouraging and nurturing these relationships and places are, the better the child will be able to grow. Furthermore, how a child acts or reacts to these people in the microsystem will affect how they treat her in return. The mesosystem describes how the different parts of a child's microsystem work together for the sake of the child. For example, if a child's caregivers take an active role in a child's school, such as going to parent-teacher meetings and watching their child's soccer games, this will help ensure the child's overall growth.

The exosystem level includes the other people and places that the child may not interact with often but that still have a large effect on her, such as parents' workplaces, extended family members, the neighbourhood, parents' social networks, government and social policy. For example, if a child's parent gets laid off from work, that may have negative effects on the child if her

parents are unable to pay rent or to buy groceries; however, if her parent receives a promotion and a raise at work, this may have a positive effect on the child because her parents will be better able to give her physical needs.



The macrosystem, which is the largest and most remote set of people and things to a child but which still, has a great influence over the child. It refers to the attitudes, beliefs and ideologies of the child's culture. The macrosystem includes things such as the relative freedoms permitted by the national government, cultural values, the economy, wars, etc. These things can also

affect a child either positively or negatively. For example a culture's values concerning child-raising can affect a child either positively or negatively.

The last system is the chronosystem which refers to the pattern of the environmental events and transitions over time. In the model the historical time and place of an individual, the timing of transitions and events occurring during their lives and historical events are all important in determining a person's life course. And so from this model, child development is the result of a complex dynamic interplay between biological, social and behavioural factors (Centre for Community Child Health, 2000; Lerner, 2006; Zubrick, Silburn, & Prior, 2005).

In this study children who find themselves at the Early Childhood Care and Development (ECCD) centres are still developing and so the issues raised in Bronfenbrenner's theory were particularly important as the child at the centre interacts with his or her environment; both physical and with humans.

Interactional-constructivist theory of child development and the

environment

The interactional-constructivist theory of child development and the environment is a built up on ecological conceptions of the environment and behavior relationship. Major developmental theories, like those of Piaget, Werner, Bronfenbrenner and others, highlighted the interaction of the child with his or her environment as the fundamental basis of development and so the richer the environment, and the more freedom the child has to explore, to make mistakes, and to learn from those mistakes, the more developmentally appropriate that environment is (Moore 1987 as cited in Moore & Sugiyama, 2007).
With the interactional-constructivist theory of child development and the environment, more emphasis is placed on the physical environment than Bronfenbrenner and others did as it extends the general views of the interdependence of the physical, social and personal components of settings, by focusing on the linkages between the architectural-geographic environment and the social system independently and jointly influencing behavior. The theory asserts that in order to understand early childhood development more comprehensively, it is important to understand the effects of both physical and social factors as independent effects, as well as the interaction between them.

Therefore the child's development (dependent developmental variables) is now seen as a dynamic interaction between the child, characteristics of the architectural or designed environment (independent physical environmental variables), and characteristics of other people such as groups of children, caregivers or teachers, the curriculum among others (moderating social environmental variables). Based on this theory, Moore and Sugiyama (2007) conceptualized the physical environment of early childhood centers into several parts, each of which can be evaluated independently. Figure 3 shows the way that the functions of an ideal early childhood center may be conceptualized and spatially grouped together.

Some childcare building may or may not have all these functions, and some areas may be used to perform several related functions. The "common core" which is usually adult oriented, comprises a collection of shared facilities which normally includes the reception area, administrative offices, meeting rooms, staff room, adults' toilets, kitchen, laundry, multipurpose area (gym), and storage room. "Module" refers to a set of physically and

functionally separate spaces for groups of children which are sometimes called "wings", "houses", "pods" or "classrooms". They can be freestanding, semidetached or interconnected buildings on the same site.



Figure 3: Model of an Ideal Early Childhood Educational Facility based on Interactional-Constructivist Theory of Child Development and the Environment.

Source: Moore and Sugiyama (2007)

Child care centers which are small may have one or two modules but NOBES ideally a larger number of modules are recommended so that the group size is kept to a minimum. A further division of the modules may be done to get the "home base" which is adjacent to or surrounded by a variety of "resource-rich activity spaces". The "home base" provides caring functions related to children's basic needs such as eating, toileting and sleeping, diaper changing for infants and young toddlers, and storing of personal belongings.

The "resource-rich activity spaces" also provide architecturally welldefined spaces for small groups of children to be engaged in an educationally

related activity, such as physical activities as well as age and curriculum dependent creative and social activities. The activity areas include the space for all the learning resources needed for each activity, display area and a storage area. Outside the building is the play yard which is meant to meet the functional and developmental needs of the child through outdoor activities.

Since this study was focusing on the health and safety conditions of Early Childhood Care and Development (ECCD) centres, it was very important that the quality of the physical environment of these centres were assessed based on the proposed model of an ideal early childhood educational facility with the guide of the interactional constructivist theory of child development and the environment.

Model of children's health and its influences

This is a model developed by the National Research Council and the Institute of Medicine's Committee on Evaluation of Children's Health (2004) that shows how multiple influences interact over time to produce health and that these interactions changes in line with a child's developmental stage. This model builds on the determinants of health model developed by the U.S. Department of Health and Human Services (2000) which depicted the interaction of biology and behavior and the interactions of the physical and social environments on both and also looked at the influence of public policies and interventions and of access to quality health care on the health of individuals and groups. The model of children's health and its influences (National Research Council & Institute of Medicine, 2004) adds to the model of determinants of health and views all the determinants as a kaleidoscope. Figure 4 shows the model of children's health and its influences.

In a kaleidoscope, individual pieces of colored glass are arranged in a fixed form but in a mixture of colors and shapes based on how the specific colors and shapes of glass interact when the kaleidoscope is turned. So it is also, that the results of specific influences on health changes as the influences change and interact over time and throughout development to produce health. As the child grows, the kaleidoscope turns and the patterns change, mirroring their changing health. According to the National Research Council and Institute of Medicine (2004), at certain stage of life, the turns of the kaleidoscope are very fast, reflecting significant developmental change; at other stage the turns are less rapid. But with every turn there is an incorporation of the previous elements, including the child's previous health, and throws them in new light.

The spheres which sizes are dynamic, represents the influences and they overlap each other so that the final pattern is a display of the interactions among the spheres of influence and not just a collection of distinct health influences. Children's health is therefore determined by the interaction of a multitude of influences, reflecting complex processes. The model (National Research Council & Institute of Medicine, 2004) presents the various categories of the multiple influences on children's health as follows: children's biology and behavior; their physical environment; social environment; services and policy.

Children's biology covers the genetic makeup of the child. The influence of genes on health always exists in an environmental context. Whatever happens in the social (example: family, community, school, culture) and physical (example: ultraviolet light, pollutants, medications) environments

interact with and influence biological processes and so events before, during, or after conception can cause disruptions in the genes of the fetus and this can lead to disorders immediately or later in life.



Figure 4: Model of Children's Health and its Influences. Source: National Research Council and Institute of Medicine (2004).

In some instances, there can be modifications in the environment to improve outcomes. The National Research Council and Institute of Medicine (2004) further explains that children's behavior in the model refers to the child's attitudes, emotions, beliefs and cognitions as well as his or her overt behaviors. These affect the health of the child because they influence the

obvious behaviors of the child such as his or her life style choices as well as health behaviors which eventually alter the child's health outcomes.

The child's behavior includes his or her interactional and social behaviors (example: peer interactions, obedience to parental requests), health promoting behaviors (those that increase the likelihood of future health, such as regular balanced diet and exercise) and health impairing (those that adversely cause actual morbidity or mortality, such as smoking, drinking, or reckless driving). Most of the time, the behavioral influences on children's health are reciprocal, both influencing and influenced by parents, peers, and others.

The physical environment in the model (National Research Council & Institute of Medicine, 2004) captures all the external conditions that affect children's health when they are exposed to them. These include chemical, biological and physical influences that exert their impact on the health of the child through prenatal exposures, childhood exposures as well as the built environment such as home, school, and work settings. During pregnancy a fetus can be exposed through the mother's diet and water consumption, occupation, as well as her substance use. During childhood, exposures to air pollutants, food contaminants, infectious agents, noise and radiation also affects the health of the child.

Housing conditions as explained by the National Research Council and Institute of Medicine (2004) also influences children's health and as they grow they tend to spend more time in other physical locations apart from their homes such as child care, school and workplace settings which expose them to new physical environments. The built environment plays a major role in either hampering or promoting physical activity in children depending on how

schools playgrounds, parks and sidewalks are integrated into the design of a community. The social environment in the model encompasses the family, community, culture and discrimination as all having influences on the health of the child.

Family influences include both family demographics (socioeconomic status, family composition and size) and processes (parenting, family learning environment, parental mental health, and parental substance abuse) which in combination with other environmental factors can impact either positively or negatively on the health of the child (National Research Council & Institute of Medicine, 2004). Community influences can come from schools, neighborhoods, or other organizations and can function through children's peer groups, the adults with whom children come into contact, or the larger set of social and cultural practices in neighborhoods.

So these influences include community demographics (such as neighborhood demographics and economic characteristics) and the community processes (such as schools and early education programs, violence, social organization of neighborhoods and schools as well as peer influences). Cultural beliefs and practices as well as discrimination particularly regarding race and ethnicity is also seen to affects the health of the child in that their influence can either lead to health promoting habits that can have positive impact or health impairing behaviors which will have a negative impact on the child's health.

The model captures services to include services provided by the personal and public health system, as well as the environmental health, education, and social service systems (National Research Council & Institute of Medicine,

2004). They include specific health interventions, such as immunizations, as well as programs of integrated services that address prevention, promotion, treatment and risk reduction simultaneously. These services can modify or direct a course of healthy development, modify pre-disease pathways and minimize the risk of exposures before they occur, thereby actively promoting the development of health capacities. Services work at different levels, including the level of the child, family and community, as well as the larger social, physical, and policy environments.

The model of children's health and its influences finally talks about policy by emphasizing that the health of children is affected by laws, rules, and regulations developed at the national, state, and local levels directed specifically at health or health care services and these governmental actions establishes the availability of publicly supported services as well as the regulation of privately administered services. When policies are in place, they play a vital role of directing how communities operate and this affects the health of children in the long run (National Research Council & Institute of Medicine, 2004).

Since this study was focusing on the determinants of health and safety conditions of Early Childhood Care and Development (ECCD) centres, it was also very important that all the influences on children's health were considered in assessing the state of the early childhood care and development service provided and so the health and safety practices of these centres as well as that of the teachers (caregivers) were taken into consideration.

© University of Cape Coast https://ir.ucc.edu.gh/xmlui Model of early childhood education

This is a model developed by Malerba (2005 as cited in Institute of Medicine & National Research Council, 2012) that looks at the effects of the early childhood workforce on child development and posits that for children to develop well and exhibit good developmental outcomes, the caregiver's characteristics in relation with the care giving environment will lead to the behavioral processes in the child care setting which will result in the child's As caregivers and teachers care for children, they form competencies. relationships which are critical for the child's healthy development. Figure 5 shows the model of early childhood education.

Caregiver characteristics identified as important to outcomes for children includes education, formal training, and non-traditional beliefs about child rearing; years of experience and age; conscientiousness about the job and commitment to caring for young children and low levels of depression; finding personal rewards in the job; and professionalism and recent training which was found among family child care providers only (Institute of Medicine [IOM] & National Research Council [NRC], 2012).



Figure 5: Model of Early Childhood Education Source: (Malerba, 2005 as cited in IOM & NRC, 2012).

The care giving environment in the model captures the structural features of the child care environment. And that the features that are best predictors of positive outcomes in children include low child to adult ratio; small group size; caregivers with non-traditional child-rearing beliefs; and high-quality physical environment (such as amount and types of various materials, health and safety features). The adult to child behavioral processes in the childcare involves the adult to child interactions which should be a positive engagement with children on the part of the caregivers. Behaviors such as responsiveness and sensitivity, emotional tone and warmth , language use with children and intentional teaching, all directly affect child development and have longer term effects on later schooling and social-emotional adjustment (NRC, 2001; NRC & IOM, 2000).

This model of early childhood education was very relevant to this current study because it was very important to gather information on the characteristics of the caregivers and the care giving environment as they play a vital role in determining the health and safety conditions in an early childhood care and development facility.

Conceptual Base of the Study NOBIS

Based on the preceding review, I formulated a conceptual framework model of determinants of health and safety conditions of Early Childhood Care and Development (ECCD) centres depicted in figure 6. The health and safety of children is a broad issue that encompasses several factors that need to be considered for a holistic assessment. The conceptual framework of this study was intended to help get a complete way of assessing the health and safety conditions of these centres focusing more on the physical environment

in order to capture all the physical factors that contribute to the healthy development of children in early childhood care and development centres.



Figure 6: Conceptual framework of determinants of health and safety conditions of ECCD centres used in the study.

The conceptual framework model of determinants of health and safety conditions of Early Childhood Care and Development (ECCD) centres was operationalised in this study to assess the health and safety conditions of ECCD centres in Cape Coast Metropolis of Ghana. Care giver or teacher characteristics included demographic information from the ECCD teachers in Cape Coast Metropolis such as the teachers' age, educational level and specialized training in early childhood development and care. Care giving environment covered information about the specific class the ECCD teachers were teaching, the number of children in that class and the number of teachers handling the class so that teacher-to-child ratios can be determined.

The care giver's health and safety practices were routines or things the ECCD teachers were doing at the centres as they took care of the children to ensure their health and safety, and the centre health and safety practices were also the things the ECCD centres themselves had put in place to ensure the centre was safe for the children to develop healthily. Centre characteristics included background information about the ECCD centres in the Cape Coast Metropolis such as the auspices, as to whether the centre was a private or public ECCD centre, the number of children enrolled in the various classes as well as the number of staff the centre had.

Quality of the physical environment involved the assessment of the physical environment of the ECCD centres in the Metropolis including the planning of the centre, the building as a whole as well as indoor and outdoor activity spaces provided at the ECCD centre. ECCD services were operationalised as the ECCD centres in the Cape Coast Metropolis of Ghana

and the ECCD policy was the early childhood care and development policy in Ghana.

Concept of Childhood and Early Childhood

The Convention on the Rights of the Child (CRC) defines a child as "every human being under the age of eighteen years, unless under the law applicable to the child, majority is attained earlier" (The Convention on the Rights of the Child, Art.1, 1989, p.1). The CRC was presented by the UN in1989 and even though a Human Rights Convention already existed there was a growing understanding that children as a group are in need of special attention and protection. In the Children's Act from 1998, the Ghanaian Government defines a child as "a person below the age of eighteen years" (Children's Act, 1998, p 6).

The concept of childhood has been explained in history by Cunningham (2005) as the ideas that surround children. He argued that there is a relationship between childhood and experiences of being a child. To him, if the ideas of being a child change, the child's childhood experiences also changes. This means that a child's daily experiences are what can be considered as his or her childhood. The Social studies of childhood claims that the concept of childhood is a social construction which varies across cultures and societies. Hence its meaning and contents varies across time and space (James & Prout, 1997).

Within the Ghanaian context, children are perceived as biologically vulnerable beings in need of protection and nurturing and this prescribes the role that parent, schools and the entire community plays (Boakye-Boaten, 2009). Fathers are seen as the bread winners of the family, mothers are in

charge of providing the needed nurturing for the children and the schools and the entire community takes up the role of the parents in their absence. This means that the parents, teachers, and community in general complement each other in a child's education and care. This can be seen in our Ghanaian proverb; *wotetew abofra na wonnyen abofra* which literally means "A child is brought up not reared".

The child's upbringing is based on the adage that while in the womb the child belongs to the mother; once delivered it becomes the property of the entire community (Sackey, 2009). It is therefore the responsibility of the entire community to ensure that the child grows to be productive and responsible in the society which is in line with the African collectivism. The community elders for example give moral and ethical instructions to the children so that they can understand the needs of the community and its traditions (Salm & Folola, 2002). As a result, preschool practices are therefore expected to conform to the culture by ensuring that the children are brought up and not reared (Sackey, 2009).

Early childhood

Early childhood is defined differently by various regions and countries depending on their traditions and how their primary education systems are organized. Whereas transition from preschool occurs around age seven in certain countries, others occur after age four (UNCRC, General Comment 7, 2005). For Ghana, transition to primary school starts from 6 years even though quite a number of children transition at a later age. Owing to the complexity of the concept, a working definition of early childhood was proposed by the committee on children's right as the period below the age of 8 years. This

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included children at birth, through infancy, preschool years and the transition period to school (UNICEF, 2007). The Early Childhood Care and Development Policy in Ghana also acknowledges early childhood as the first eight years period of a child.

Woodhead (2006) suggested that despite the fact that a chronological age had been set for early childhood, the period need to be seen in the context of social and cultural dimension rather than seeing it as universal route of development. Based on this, Woodhead, argued that children's development might most accurately be described as "naturally cultural". He explained that the most important feature of children's environment is the people with whom they build close relationships such as parents, care givers, siblings, peers among others. These persons give meaning and direction to children's experiences as they introduce them to the cultural practices in the neighbourhood.

Children's rights perspective

According to Freeman (1996), rights are entitlements or valuable commodities which are not to be begged for. The 1984 Universal Declaration of Human Rights of indicates that everyone including children is entitled to all rights laid down in the declaration, without any distinction (Bourdillon, 2009). This implies that rights are not dependent on advantage that one has or on kindness. There have been arguments over the years as to whether or not a child should have rights and this brought about two different perspectives: the "Care takers" and the "Liberationist".

Individuals like Goldstein, Freud and Sonit were among the group with the care takers perspective. They believed that a child is the property of his or

her biological parents and have no rights at all; the way he or she is treated is solely by the discretion of the parents. They believed that because the child is still developing, he or she does not have the cognitive capacity to make wise decisions and so the child is seen as irrational and not competent to make informed decisions. Therefore the parent or adult care taker decides for the child (Franklin, 1995; Moosa-Mitha, 2005).

This idea that a child cannot make decisions on his or her own, is shared by John Locke in 1821 when he stated in his book titled "Two Treatises on Government" that humans "are all born infants, weak and helpless, without knowledge or understanding" and so "all parents are under an obligation to preserve, nourish and educate the children" (as cited in Geerdink, 2009 p. 4). The other group with the child liberationist's perspectives such as Franklin, Holt and Farson were of the view that children do show ability of logical thinking and do make informed decisions. They are from the premise that all human beings are capable of making realistic, independent decisions.

The liberationists argued that, it cannot be warranted that because someone is a child, he or she needs specific rights. This to them meant that a child was considered as vulnerable and in need of help, which in reality is an "ideological construct which helps to support the denial of their proper rights" (Archard, 1993 p. 49). They therefore suggested that a child should be given all the rights an adult has including the right to vote (Franklin 1995; Moosa-Mitha, 2005). Children are entitled to the rights to provision, protection and participation, generally referred to as the "3 Ps".

According to Franklin (2002), these 3Ps relate to the right to food, water, healthcare, shelter and education (provision), rights to protection against

sexual abuse, neglect and exploitation (protection) and rights to privacy and freedom of association, expression and thought (Participation). Penn (2008) explained that unlike the developmental approach, which says that a child develops gradually to become an adult and so needs protection throughout the journey, the Children's rights approach especially the liberationist perspective suggests a more radical standpoint. It emphasizes the fact that children have capabilities and are active in constructing their own world. Penn further explained that this perspective views the life of a child as a competent citizen, and looks at the provision of Early Childhood Education that wider context.

The Biology of Health in Early Childhood

In an effort to explain WHO's definition of health as being more than merely the absence of disease, the Centre on the Developing Child at Harvard University (2010) implied that health is an evolving human resource that helps children and adults adapt to the challenges of everyday life, resist infections, cope with adversity, feel a sense of personal well-being, and interact with their surroundings in ways that promote successful development. Science tells us that meeting the developmental needs of young children is as much about building a strong foundation for lifelong physical and mental health as it is about enhancing readiness to succeed in school (Shonkoff, Boyce & McEwen, 2009).

It is important that one understands how personal experiences, environmental conditions, and developmental biology work together in early childhood to influence the roots of lifelong physical and mental well-being. Early childhood is a time of rapid development in the brain and many of the

body's biological systems that are critical to sound health. Some researchers have compared a child's evolving health status in the early years to the launching of a rocket, as small disruptions that occur shortly after take-off can have very large effects on its ultimate trajectory (Coe & Lubach, 2003).

The biology of health is defined by advances in science that explain how experiences and environmental influences "get under the skin" and interact with genetic predispositions, which then result in various combinations of physiological adaptation and disruption that affect lifelong outcomes in learning, behaviour, and both physical and mental well-being (Centre on the Developing Child at Harvard University, 2010a). This begins with the future mother's pre-conception nutritional status and continues into the early years of the young child's growth and development.

Three major issues under biology of health in early childhood that literature is reviewed under are: biological embedding during sensitive periods of development; physiological adaptations or disruptions in early development and cumulative exposures to adverse childhood experiences.

Biological embedding during sensitive periods of development

During sensitive periods of early growth and development, the evolving architecture of the brain (as well as the maturation of other organ systems) is highly receptive to a wide range of environmental signals or cues, whether positive or negative (Johnson, 2005). A considerable body of research suggests that adult disease and risk factors for poor health can be biologically embedded in the brain and other organ systems during these sensitive periods, with resulting health impairments appearing years, or even decades, later. Biological embedding as a function of malnutrition, toxic stress response, or

exposure to damaging chemicals can occur in various ways, including mechanisms that change the regulation of genes that affect brain and body development (National Scientific Council on the Developing Child, 2010b).

For example, poor living conditions in early life such as inadequate nutrition or recurrent exposure to infectious diseases among others are associated with increased rates of chronic cardiovascular, respiratory, and psychiatric diseases in adulthood (Barker et al., 2005; Nomura et al., 2007; Roseboom et al., 2000). Also, lower birth weight is associated with several risk factors for later heart disease, such as hypertension, central body fat distribution, insulin resistance, metabolic syndrome, and diabetes (Barker, 2004; Cutfield, Jefferies & Hofman, 2006; Gluckman & Hanson, 2006). These findings are supported by evidence from a variety of animal and human studies. For example, lower birth weight in rats has been associated with higher blood pressure (Schreuder, Fodor, van Wijk, & Delemarre-van de Waal, 2006), and studies in humans have linked poor growth in utero to later problems with heart disease and hypertension (Shankaran et al., 2006).

Research investigating the underlying mechanisms that explain these associations have found linkages between early experiences of child maltreatment and evidence of heightened inflammatory responses in adulthood that are known risk factors for the development of cardiovascular disease, diabetes, asthma, and chronic lung disease (Chen, Salam, Eckel, Breton, Gilliland, 2015) as well as elevated inflammation as early as age 12 in children experiencing maltreatment and depression, regardless of their socioeconomic status (Danese et al., 2010).

Physiological adaptations or disruptions in early development

Early experiences or exposures can affect adult health in two ways by the chronic wear and tear of repeated damage over time or by the biological embedding of specific physiological disruptions during sensitive developmental periods (Hertzman, 2000; Kuh & Ben-Shlomo, 2004). If a physiological mal-adaptation occurs in response to cumulative exposure to adverse social and or physical conditions, then an ensuing chronic disease can be seen as the consequence of repeated encounters with psychologically or physically toxic environments.

When damaging exposures occur during sensitive periods in the early development of specific biological processes, the resulting disruptions can become biologically embedded and subsequent adult diseases appear as the latent (or delayed) outcomes of early environmental assaults. In either case, science shows that there can be a lag of many years, even decades, before early harm is expressed in the form of overt disease.

Cumulative exposures to adverse childhood experiences

An extensive and growing body of research demonstrates multiple linkages between childhood adversity and health impairments in the adult years. The Adverse Childhood Experiences (ACE) Study, for example, documents strong associations among multiple instances of traumatic or abusive childhood events (as recalled in adulthood) and an extensive array of conditions later in life, including cardiovascular disease, chronic lung disease, cancer, depression, alcoholism, and drug abuse (Edwards, Holden, Felitti, & Anda, 2003; Felitti *et al.*, 1998).

Individuals reporting more adverse childhood experiences also had substantially greater risks for life-threatening psychiatric disorders (Felitti *et al.*, 1998), overlapping mental health problems (Anda et al., 2006), teen pregnancies (Hillis et al., 2004), obesity, physical inactivity, and smoking (Dong et al., 2004). Other longitudinal studies have found comparable linkages between early stressful life events and adult disease (Caspi, Harrington, Moffitt, Milne & Poulton, 2006; Horwitz, Widom, McLaughlin & White, 2001; Schilling, Aseltine & Gore, 2007).

In all cases the pattern has been the same the greater the number of adverse experiences in childhood, the greater the likelihood of health problems later in life. Research on the biology of adversity illustrates how the body's physiological equilibrium breaks down under cumulative conditions of chronic stress or what has been called "allostatic load" (McEwen, 1998). The activation of stress management systems in the brain results in a tightly integrated repertoire of responses involving the secretion of stress hormones, increases in heart rate and blood pressure, elevation in blood sugar and inflammatory protein levels, protective mobilization of nutrients, redirection of blood flow to the brain, and the induction of vigilance and fear (McEwen, 2000).

The normal, healthy, temporary activation of these systems represents a "positive stress response" and is protective, even necessary, in the face of an acute threat. A "tolerable stress response" is a more serious and sustained activation that is mitigated by supportive adults, who help the child develop adaptive coping responses. A "toxic stress response" in early childhood can weaken developing brain architecture and recalibrate the threshold for

activating the stress response system for life. It occurs under circumstances of chronic or overwhelming adversity without the buffering support of caring, consistent, and supportive relationships (National Scientific Council on the Developing Child, 2005; Shonkoff *et al.*, 2009).

Animal studies indicate that toxic stress also can have direct, negative, and persistent effects on brain circuits that control reward and motivation. A research on rodents has demonstrated that profound neglect during early development increases drug-seeking behaviour in adult rats (Zhang, Sanchez, Kehoe & Kosten, 2005). A documented patterns of allostatic load that parallel racial disparities in health outcomes suggest that, chronic physiological stress may play a role in the premature and disproportionate burden of physical and mental illness experienced by African-Americans and other groups that experience discrimination (Geronimus, Hicken, Keene & Bound, 2006).

African-Americans, for example, sustain earlier deteriorations of health compared with whites, leading to racial health disparities that increase with age and resulting in a life expectancy for blacks in the United States that is four to six years less than for whites (Harper, Lynch, Burris & Davey Smith, 2007). This finding is consistent with research suggesting that the "weathering" of the body under conditions of chronic stress reflects an acceleration of normal aging processes (Geronimus, 1992; Geronimus, 1996; Geronimus *et al.*, 2006).

Research on Quality Child Care

The Australian Research Alliance for Children and Youth [ARACY], (2015) reiterated the fact that there are indications that high quality ECCD centres are more likely to impact positively on children through improved

outcomes. A study by Anders, Grosse, Rossbach, Ebert and Weinert (2013) also indicated that good quality ECCD programme has been found to be a predictor of constant positive outcomes in children compared to poor quality. Similarly a study by Heckman (2011) showed that good quality ECCD programme impact positively on children's physical, social, emotional and cognitive development and evidence points to the fact that all these development are dependent on the quality of ECCD programme (Melhuish *et al.*, 2015; Sylva, Melhuish, Sammons, Siraj & Taggart, 2014).

Studies have also found an association between the quality of ECCD programme and educational outcomes with some studies finding long lasting benefit of cognitive performance even later in life (Melhuish et al. 2008; Sammons et al. 2008; Sammons, Sylva & Melhuish, 2014; Sylva et al. 2014). The National Association for Education of Young Children (NAEYC) described an ECCD programme which is of a high quality as the type that provides safe, nurturing environment that helps young children to develop physically, socially, emotionally and cognitively (Schuyler Centre for Analysis and Advocacy, 2012). According to Waldegrave (2013, p. 59), "providing low cost, low quality, childcare can help maternal employment levels, but if it is not high quality it will hinder child development and make no difference to school-readiness gap."

Studies have also indicated that ECCD programmes that are not of a good quality places the children under a greater risk for infectious diseases, injuries and poor nurturing (Bradley &Vandell, 2007; Lee & Greig, 2008; Waibel & Misra, 2003) but a high quality ECCD programme provides beneficial services to the children such as care that is developmentally appropriate, less injuries

and illnesses, higher likelihood of getting health care, health screenings as well as quick detection and referral for health, developmental and behavioural issues, and care for children with special needs (Bradley & Vandell, 2007; Ramler, Nakatsukasa-Ono, Loe & Harris, 2006).

Quality ECCD programme is considered as a vital part of a healthy path towards a child's readiness to learn and has been found to be related to health later in life (Banghart & Kreader, 2012; Dworkin, Honigfeld & Meyers, 2009; Reynolds, Temple & Ou, 2007). The first major study of quality of childcare was the National Day Care Study by Travers et al. (as cited by Hunstman, 2008) which identified costs and effects associated with variations in centre characteristics that were regulated or could potentially be regulated by the federal government. The study searched for day care centre characteristics which could both protect children from harm as well as foster their emotional, social and cognitive development. The findings among others gave evidence to support that all children can benefit from a single set of standards.

Childcare settings characteristics such as staff to child ratio; size of child groupings; and care giver qualifications among others which are subject to government regulation have come to be known in subsequent studies as indicators of "structural quality" (Huntsman, 2008). What has become the indicators of 'process quality' are those things that actually happens in childcare settings that are measured through observation, such as children's interactions with caregivers, other children and their engagement with materials and activities provided in the centre.

The focus of this current study is on the structural quality of ECCD centres in the Cape Coast Metropolis and according to Early Childhood

Australia (2013), after several years of research, there is a common agreement that structural element of early childhood education and care services that have shown significant impact on quality includes staff qualifications, the number of qualified staff, teacher or staff to child ratios and requirements concerning group size, health and safety as well as physical space.

Research on ECCD Care Giver / Teacher Characteristics

Care giver/Teacher's educational qualification

Early childhood care and development teachers who are well-trained and prepared with the right knowledge, skills, and conditions have been seen to be more likely to provide supportive practices that are age-and developmentallyappropriate, such as quality interactions and content instructions that influence children's socio-emotional development, language development, and cognitive skills positively (Neuman, Josephson & Chua, 2015).

A study in United Kingdom (UK) conducted in the year 2015 compared the period of rapid development of child care services in the UK over the last 15 years and the results from the observations of quality in the centres showed a similar increase in the observed quality of care in centres and teacher qualifications which gave an indication that increasing teacher qualifications may have led to increased quality of early childhood care (Melhuish, Gardiner & Otero, 2015). A report from the Office for Standards in Education indicated that quality early childhood education and care (ECEC) teachers offer higher quality support for children especially those between the ages of two and a half years as well as school age children (OECD, 2015).

According to ARACY (2014), the research evidence published from 1983 to 1997 indicates that caregivers who have more formal education offer care

that is more stimulating, warm and responsive than caregivers less formal education. Some studies also showed evidence that teacher and director education levels were associated with higher observed quality for children in ECCD settings (Denny, Hallam, & Homer, 2012; Hallam, Bargreen, & Ridgley, 2013). A study by Litjens and Taguma (2010) showed that better qualified teachers foster stimulating environments and high quality pedagogy which leads to better learning outcomes but this, according to UNESCO (2015) does not apply to only ECCD teachers but to others who also provide services to children and their families such as social workers and community health workers.

Another study by Elicker, Wen, Kwon, & Sprague (2013) found that higher educational levels of teachers and caregivers are associated with quality programs for infants and toddlers. Research works that has been conducted in England have found evidence pointing to the fact that teacher qualifications (such as a graduate teacher with a qualified teacher status, overall mean qualification of the teaching team of a centre and whether the teaching team on the average has a one to two years of post school training) partly predicted higher quality and or better child outcomes among children aged three and below (Mathers et al., 2011; Mathers & Sylva, 2007; Smith et al., 2009).

A longitudinal study conducted in the UK called the Effective Provision of Pre-School Education (EPPE), found that child care centres which had teachers with higher qualifications had higher quality scores on quality rating systems and children made more progress as learners (Sylva, Melhuish, Sammons, Siraj-Blatchford & Taggart, 2004). Another study in Massachustts found that when it comes to toddlers and infants' classrooms, higher levels of

teachers' education was a predictor of quality (Marshall, Creps, Burstein, Roberts, Glantz & Robeson, 2004). A study in the United States also found that children in childcare settings led by a teacher with a bachelor's degree in early childhood exhibit better progress and success in language, literacy and numeracy learning and were more ready for school compared with children in programs led by a teacher with less qualification (Vandell & Wolfe, 2000).

The EPPE results also showed that if trained teachers worked with preschool children aged three to five years for a longer period, it has the greatest impact on quality especially children's literacy and social learning at age five (Sylva et al, 2004). Correlational studies have also found that the number of years of education was a significant and strong predictor of sensitive and stimulating teacher-child interactions as well as global quality ratings (Fukkink & Lont, 2007). According to Epstein, Halle, Moodie, Sosinsky, & Zaslow (2016), some large scale research works conducted in the 1996 and 1999 by NICHD did not find specific associations between teacher degree and program quality even though an effect was seen with more formal education (which was measured as a continuous variable ranging from below high school to a post master's degree) on more positive care giving practices.

A study in the Greater Accra Region of Ghana that aimed at finding out the effects of level of education and years of experience of teachers on their interactions with children in early childhood institutions found no statistically significant difference between level of education and years of experience and teachers' interaction scores (Nyarko & Addo, 2013). A systematic review of 111 studies have shown evidence from a number of developing countries including Costa Rica, Bangladesh, and China, that quality of early childhood

program and children's cognitive outcomes were significantly associated with teachers' qualifications and training (Rao et al., 2014).

Research findings from Low- and Middle-Income Countries also have shown evidence that improved quality and child outcomes were often correlated with better educated and trained teachers (Behrman, Engle & Fernald, 2013; Engle et al., 2011). There is evidence too that teachers with higher qualifications influence positively the behavior of other teachers with lower qualification working beside them (Siraj- Blatchford, 2010 as cited in OECD, 2012) and there are fewer cases of child accidents or serious incidents reported when teachers with higher qualifications are employed (Vandell & Wolfe, 2000).

After analyzing a data from 80 Low- and Middle-Income Countries, it was found that fewer than half of all these countries' early childhood teachers were trained to national standards (International Labour Organization [ILO], 2012). When it comes to Ghana, the situation is not different. Many kindergarten programmes are challenged by insufficient trained teachers (Yoshikawa & Kabay, 2015). The Ministry of Education's report on Basic Education in Ghana (EMIS, 2015) indicated that the overall percentage of trained teachers in Crèches and Nurseries stood at 5.3% and the overall percentage of trained teachers in Kindergarten stood at 45.5% giving an indication that Ghana as a nation was challenged with lack of qualified professional early childhood teachers.

The International Labour Organization (2012) also found that even in Low- and Middle-Income Countries where majority of the ECCD teachers were trained, their national standards varied considerably which was a

confirmation of the assertion by (Dalli et al., 2011) that when it comes to the working staff in the early years settings, there is a wide variation within and between countries when it comes to the qualifications and training as well as types and levels of education among them. It has been indicated that generally early childhood teachers who work with children below age three have lower educational qualifications and training requirements compared to teachers working with older children (Neuman *et al.*, 2015).

There also seems to be differences on the percentage of trained teachers at a national level depending on the auspices of the ECCD centre (public or private, formal or non-formal) and the region under consideration. A study conducted in 2014 in some states of India indicated that more than half (68.8%) of ECCE staff at private facilities were not trained at all, compared to only 11 % in public centers (Kaul, Chaudhary & Sharma, 2014). Studies have indicated that teachers with low qualifications and inadequate training have the potential of burning out, a high risk of getting depression and a risk of having poor emotional health which affects their ability to develop the kind of relationships that support the children's learning and development (Shonkoff, 2011; Hamre & Pianta, 2004).

However, a study by Honig, Kim, Ray and Yang (2013) found that ECCD teachers and caregivers with lower education levels (high school diploma or less) responded more quickly to children's distress compared to teachers with higher education levels. Even though there is a general agreement to the fact that well-trained teachers are necessary for quality ECCD, there is a limitation in terms of evidence on what level, content, and organization of teacher training and professional development such as pre-service, in-service, or

combination are most effective for quality improvement in low-resource contexts (Neuman *et al.*, 2015).

Specialized training in early childhood care and development

Some empirical evidence has shown that specialized training helps improve quality in child care. According to ARACY (2014), the research evidence published from 1983 to 1997 indicates that caregivers who have more specialized training offer care that is more stimulating, warm and responsive than caregivers with no specialized training. Also caregivers with professional training in early childhood development are more likely to organize materials and activities into more age appropriate environments for children than those with no specialized training (ARACY, 2014). There is also evidence pointing to the fact that specialized training has association with higher quality interactions with children, more positive and less detached care giving (Press & Mitchell, 2014).

Son, Kwon, Jeon and Hong (2013) also found that teachers with specialization in early childhood education or child development exhibited higher social-emotional practices in their classrooms compared to teachers with no specialization in ECCD. There are studies in developing countries such as Jordan and Vietnam indicating that specialized training can help form teacher beliefs as well as their ability to transfer these beliefs into activities with children. Research findings in Jordan (Betawi, 2010) revealed that ECCD teachers with less specialized training and experience were more likely to hold traditional and authoritative beliefs in support of teacher-directed approaches than teachers with specialized training. Findings in Vietnam, Lam Dong province also indicated that ECCD teachers trained with a "strong theoretical

framework" around child-centered learning expressed more confidence in implementing the pedagogy than less-qualified teachers (Thao & Boyd, 2014).

Another study by Mathers et al., (2011) designed to identify the impact of the presence of a graduate with a specialist Early Years Professional Status on quality, found a positive impact on quality for pre-school children but there was no relationship with quality provision for children under the age of 30 months. A finding in the National Day Care Study (Arnnett, 1987 as cited in Ahmed, 2013) indicated that ECCD teachers with specialization in early childhood exhibit a less authoritarian way of relating with children, less punitive and were scored as being more positive.

Fukkink and Lont (2007) found a significant positive effect of specialized training on the pedagogical competencies of caregivers in childcare, including their professional attitude, knowledge and skills after conducting a metaanalysis and review of caregiver training studies published from 1980 to 2005. The researchers also found some experimental studies that showed positive effect indicating a causal link between caregiver training, caregiver competencies and child behavior in childcare although there was no significant effect due to the small number of studies involved.

Correlational studies have also found that specialized training is a significant and strong predictor of sensitive and stimulating teacher-child interactions as well as global quality ratings (Fukkink & Lont, 2007). This is confirmed by research showing that specialized knowledge of young children's development (rather than education alone) helps practitioners to be more attuned in their interactions with infants and toddlers (Melhuish, 2004). Another study which also aimed at assessing the quality in child care centres

indicated that when it comes to toddlers and infants' classrooms, teachers' with specialized training in early childhood education and child development was a predictor of higher quality (Phillips, Mekos, Scarr, McCartney, & Abbott-Shim, 2000).

Research findings in low and middle income countries have also illustrated that improvement in ECCD programme quality and child outcomes are often correlated better trained teachers (Behrman et al., 2013; Engle et al., 2011; Rao et al., 2014) and some studies have also found training to have positive effects on teacher interactions and behavior (Behrman et al., 2013; Raikes, 2015). Ofosu-Appiah (2009) had earlier opined that Ghana lacks teachers who have specialized in preschool or early childhood education. Another study by Ahmed (2013) which took an inventory of the background of personnel involved in early childhood education with specific reference to whether they had specialization in the field of early childhood education in some selected schools in the Winneba Municipality of Ghana, found that most educators did not have the professional training in early childhood education.

Research on ECCD Care Giving Environment

Children in ECCD centres have to get affection and attention from the teachers or care givers who take care of them in order for the children to build secure and emotional relationships. Studies have recognized that to have a quality environment for children in ECCD centres and to ensure that they achieve and build strong emotional and secured relationships with their teachers, then the two most essential structural characteristics to be considered is teacher-to-child ratios and group sizes (Elfer & Page, 2013).

Teacher-to-child ratios

According to Janta, Belle and Stewart (2016), if ECCD centres want to follow and maintain safety standards then ensuring that the centres have a maximum number of children per a teacher is a good thing to do. A study in England indicated that ratios for children aged below three is linked to quality care routines as well as meeting individual needs of the children (Mathers et al., 2011). Research findings have shown that when there are fewer children per a teacher, it helps with good teacher-to-child interactions (such as less restrictiveness, high stimulation, responsiveness as well as increased availability of the teacher to the child) and also related to better outcomes for children such as secured attachment, good cognitive and behavioral development and health (Bradley & Vandell, 2007; Dalli, White & Duhn, 2011; Elfer & Page, 2013; Huntsman, 2008; Phillips & Lowenstein, 2011).

A study by OECD (2012) found that when there are fewer children per teacher, there is less stress on the teachers and they can have regular and meaningful interactions with the children. There is also evidence from correlational studies in OECD countries showing an association between lower adult to child ratios and improved quality including less stress for teachers, improved interaction and healthier child development (Neuman *et al.*, 2015). There seems to be difference in the teacher-to-child ratios based on countries as well as within countries especially when it comes to public and private centres.

Research works have indicated that the most favourable recommended ratios for children below the age of two in ECCD centres which has been stated consistently is 1:3, for children within the ages of two and three years,

the recommended ratios are 1:4 or 1:5 (Dalli & Rockel, 2012; Dalli, White & Duhn, 2011; Expert Advisory Panel on Quality Early Childhood Education and Care, 2009) and for children aged three to five years the ratios are between 1:10 and 1:17 (American Public Health Association, American Academy of Pediatrics and National Association for the Education of Young Children, in Munton et al., 2002. A report by Education International (EI), 2010, indicated that when it comes to Ghana, teacher to children ratios in private ECCD centres are lower (around 26:1) compared to public centres which is around 34:1.

Group size

Most studies have emphasized that teacher-to-child ratios and group sizes have their greatest impact on babies and toddlers in terms of quality of interactions between the teachers and the children (Expert Advisory Panel on Quality Early Childhood Education and Care, 2009; Huntsman, 2008). There are indications that in OECD countries, smaller group sizes are associated with quality teacher-to-child and teacher to parent relationships (OECD, 2012). The findings of the first major study of quality in day care centres in the United States (Travers et al, 1980 as cited in Huntsman. 2008) indicated that when teachers or care givers' groups of children are small, children will be protected from harm and outcomes such as social, emotional and cognitive development of the children will be achieved.

A study in United Kingdom (UK) also found that group sizes have direct association with teachers being able to provide responsive and positive interaction with children (Munton et al., 2002). There is also evidence that when group sizes are big then negative behaviours associated with spending

long hours at ECCD centres also become rampant (Zazlow, Anderson, Redd & Wessel, 2010). Research has not made clear cut rules regarding group sizes as well as teacher to children ratios but has provided some upper and lower limits appropriate under different conditions (Munton et al., 2002). The best recommended group sizes for children in ECCD centres who are below the age of two years is six to eight children, for children aged two to three years old is ten to 12, for children aged three years is 14 to 18 and for children aged four to five is 20 to 24 children (Dalli & Rockel, 2012; Munton et al., 2002).

Research on Health and Safety Practices in ECCD Centres

The Australian Children's Education and Care Quality Authority [ACECQA] (2016) asserted that children are unlikely to gain the long term benefits of ECCD programmes unless their basic needs for health and safety are guaranteed. The American Academy of Pediatrics, American Public Health Association, National Resource Center for Health and Safety in Child Care and Early Education (2011) has also reiterated that following health and safety best practices is an important way to provide quality early care and education for children. To ensure the health and safety of children in ECCD centres, the standards and recommendations that are considered important to be followed include: hand washing; diapering; meals or food preparation; immunizations, written health and safety policies as well as a healthy physical environment (National Association of Child Care Resources & Referral Agencies [NACCRRA], 2007).

ECCD centres are known to be environment with peculiar epidemiological characteristics that gives room for transmission of infectious agents (Gibson, Rose, Haas, Gerba & Rusin, 2002). A number of studies have

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also shown that children who attend ECCD centres have high rate of respiratory infections and diarrhea as a result of the behaviors of children and caregivers (Ramakrishnan, Sparks & Berryhill, 2007; Sonoda, Tagami, Nagatomo, Yamada, Fuchiwaki & Haruyama, 2008; Younus et al, 2010). Shope (2014) asserted that an effective model of infection control in ECCD centres comprise of multiple components which includes effective hand hygiene, isolation of sick children as well as staff, immunization, cough and sneeze etiquette, appropriate use of gloves, proper environmental cleaning and staff education.

Public Health Agency (2017) reiterated that for the control of infections in ECCD centres and schools in general, the institutions must ensure that routine immunization is done; there is maintenance of high standards of personal hygiene and practice, especially hand washing, and maintenance of a clean physical environment.

Hand washing

According to Global Hand washing Partnership (2017), hand washing has been seen to be one of the most cost-effective investments in public health as it stops the spread of infections and help check the spread of some other diseases which are very expensive for individuals as well as health care systems and nations to manage. UNICEF (2016) have indicated that diarrhea and pneumonia kill 14 million children under the age of five annually and research have shown that lack of hand hygiene has contributed to a lot of diarrhea outbreaks among children and staff of ECCD centres (Kimberlin, Brady, Jackson, & Long, 2015). Children who use the washroom without supervision or hand washing afterwards, have been found to be part of
spreading disease during outbreaks of enteric infections (Galanis, Longmore, Hasselback, Swann, Ellis & Panaro, 2003).

Research works have also indicated that infections affect the health of children and lead to missed educational opportunities that may have negative impact on educational outcomes (Department for Education, 2015; Public Health England, 2014). Proper hand washing with soap and clean running water for at least twenty seconds has been seen to help remove and rinse away organisms from the skin (Centers for Disease Control and Prevention, 2015) there by stopping the germs that causes diarrhea including shigellosis, typhoid, and cholera, other common endemic gastro-enteric infections, and some respiratory infections such as influenza (flu) and pneumonia (Global Hand washing Partnership, 2017).

There are also indications that hand washing with soap decreases the occurrence of skin diseases, eye infections like trachoma, and intestinal worms, especially ascariasis and trichuriasis (Global Hand washing Partnership, 2017) and so proper hand hygiene is considered as an important part of the strategy to stop neglected tropical diseases such as trachoma (WHO, 2015).

Research has confirmed that there are contamination of the hands of children. care givers and objects and surfaces in the daycare centres (Gibson, Rose, Haas, Gerba & Rusin, 2002) and early childhood diseases that can be acquired in this situation includes otitis media (Ackerman, Duff, Dennehy, Mafilios & Krilov, 2001), upper respiratory tract infection and diarrhea (Huskins, 2000). Evidence also points to the fact that among the numerous factors that influence the transmission of infectious agent is the total number

of children at the centre (Nesti & Goldbaum, 2007). If children are crowed in a child care centre, they are at risk of poor respiratory health as they can get respiratory infections such as colds, sinusitis, pharyngitis, bronchitis among others (Nesti & Goldbaum, 2007) as well as meningitis infection (Clements, Weigle & Gilbert, 1995), meningococcal disease (Stanwell-Smith, Stuart, Hughes, Robinson, Griffin & Cartwright (1994) and childhood tuberculosis (Drucker, Alcabes, Bosworth, & Schell, 1994).

Research has also indicated that there is increase risk of hepatitis A, cytomegalovirus, H. influenza and repeated infections among children at child care centres (Collett, Brutin, Bossard, Ducruet, Kramer & Floret, 1994; Osterholm, 1994). It has long been found that simple hygiene procedures such as hand washing help to reduce incidence of illness in child care settings (Roberts, Smith, Jorm, Patel, Douglas & McGilchrist, 2000). Therefore Aronson and Shope (2017) recommends regular hand hygiene as the safest practice for care givers or teachers at ECCD centres particularly because a number of persons carry infectious agents and may transmit them long before they experience any symptoms. Hand washing intervention studies in China as well as Egypt have also shown reduction in illness-related absenteeism in school children (Jasper, Le & Bartram, 2012; Talaat *et al.*, 2011).

ECCD care givers or teachers have been targeted for hand washing interventions (Roberts *et al.*, 2000) particularly because if they do not practice good hygiene they can also transmit communicable diseases to the children in care and can also influence the children's behaviour too. Education of both teachers and children about hand hygiene procedures have been found to be helpful in reducing the incidence of illness among children in group care

(Roberts *et al.*, 2000) and intermittent training and monitoring is required in sustainable changes in practice (Alkon, Bernzweig, To, Wolff & Mackie, 2009).

It is expected that child care givers, teachers as well as children wash their hands at the beginning and the close of the day at the centre, before and after eating, handling food and feeding children and also after toileting, diapering, coughing and sneezing among others (NACCRRA, 2007) and to prevent children from getting third-hand smoke exposure, Aronson & Shope (2017) recommends that care givers or teachers who smoked before entering the centre should wash their hands. According to the American Academy of Pediatrics, American Public Health Association, National Resource Center for Health and Safety in Child Care and Early Education (2011), times or situations that both children and staff should perform hand hygiene should be pasted in all food preparation, hand washing, diapering and toileting areas.

Hand sanitizer usage

In situations where hands are not visibly soiled and there is no soap and water, the use of alcohol based hand sanitizers is recommended as an alternative to traditional hand washing (American Academy of Pediatrics, 2017; Centers for Disease Control and Prevention, 2017). Alcohol based hand sanitizers, when used correctly help reduce the spread of disease even though some germs that cause diarrhea such as noro-virus and spore-forming organisms are not killed (Aronson & Shope, 2017). A research in Colombia that studied 42 childcare centres which were faced with lack of water and sinks that were not functioning, found out that alcohol- based hand sanitizers were safe and effective in preventing acute diarrheal disease and respiratory

infection (Correa, Pinto, Salas, Camacho, Rondón & Quintero, 2012). Another study found that when it comes to prevention of respiratory infections in children in kindergarten, the use of hand sanitizer every hour was a more optimal time interval for use (Pandejpong, Danchaivijitr, Vanprapa, Pandejpong & Cook, 2012).

There are also evidence from communities as well as secondary schools in Asia and Africa showing the effectiveness of hand sanitizers in reducing microbiological burdens (Luby, Kadir, Sharker, Yeasmin, Unicomb & Sirajul Islam, 2010; Pickering, Boehm, Mwanjali & Davis, 2010). An intervention study in Bangladesh found that hand sanitizer usage was well accepted among households in a low-income urban area even though there was no significant improvement in frequency of hand hygiene behavior compared with a water and soap intervention (Luby *et al.*, 2010).

According to Santos, Kieszak, Wang, Law, Schier and Wolkin (2017) caution also needs to be taken by ECCD care givers or teachers when it comes to the use of hand sanitizers as the contents of the alcohol based hand sanitizer can be toxic if significant amount is swallowed and so children must be monitored and supervised to ensure that the product is used appropriately.

Diapering

According to American Academy of Pediatrics (2011), diapers are designed to be able to hold both urine and stool as well as reduce exposure to human waste in the ECCD centres however children who are being trained to use the toilet may still wet or soil their underwear and clothing and changing these undergarments has a risk for spreading infection due to urine or fecal contamination of surfaces (Early Childhood Education Linkage Systems, 2016).

Research has found an association between fecal contamination and increased rate of diarrhea in ECCD centres (Kimberlin *et al.*, 2015) and so to minimize fecal contamination in ECCD centres it has been found that using diapers that are for single-use and also disposable is better than cloth diapers worn with water proof pull-on pants (Counts, Helmes, Kenneally & Otts, 2014). There are also indications that when clothes are worn over either the disposable or cloth diapers with waterproof pull-on pants, it helps reduce contamination in the environment of ECCD centres (Counts *et al.*, 2014; Kimberlin *et al.*, 2015).

Another recommendation by the American Academy of Pediatrics (2011) indicates that ECCD centres should have designated areas specifically for changing diapers which should be separated from any eating, food preparation and food storage areas as well as objects, such as toys, pacifiers, baby bottle among others. It is also recommended that teachers or care givers wear disposables gloves before changing a child's diaper and after dispose of the soiled diaper or nappy with wipe into a nappy sack before putting it in a bin lined with a plastic liner with a cover, operated by a foot pedal (National Health and Medical Research Council, 2012).

Additionally, if there is a need to wash a child entirely then a clean bath or sink with running water is required after which both bath or sink and changing areas must be disinfected with detergent (Health Protection Scotland, 2011). There are steps for changing diaper which were designed to help reduce the contamination of surfaces that will later contaminate other surfaces such as

hands, furnishings and floors (Kimberlin *et al.*, 2015; University of California, 2013) and it is recommended that these steps are pasted at ECCD centres to assist teachers or caregivers in maintaining the correct routine for diaper changing (American Academy of Pediatrics, 2011).

NACCRRA (2007) recommends that all ECCD centres should follow proper diapering procedures that will prevent the spread of germs and there should be an allocated clean and sanitized surface for diaper changing that is out of reach of children and if potty chairs are used they should be easy to clean and sanitized after each use. Research has found that when an ECCD centre has equipment specifically designed for hand washing, diapering and food preparation, it significantly reduces diarrheal illness among the children as well as absenteeism as a result of illness among teachers or caregivers (Kotch et al, 2007).

Immunizations

ECCD centres by their nature presents peculiar challenges for infection control particularly because of the vulnerability of the children, they also experience close interpersonal contacts, share toys and other objects and also have inadequate ability to practice proper respiratory etiquette and hand hygiene (American Academy of Pediatrics, 2011). Unfortunately no policy can prevent every person who is likely to spread infections out of these centres (Centers for Disease Control and Prevention, 2015) and so routine immunization at the correct age is essential for children in child care as they are at high risk of complications from many vaccine-preventable diseases (Centers for Disease Control and Prevention, 2009). According to Middleton (1995 as cited in Fiene, 2002), the risk of infectious disease transmission can be reduced if individuals ensure that vaccination is up to date for all preschool children. ECCD centres should have immunization records of all the children at the centre to ensure that they are up to date (NACCRRA, 2007).

Health and safety policies

While children are in ECCD centres, they develop unique health care needs and exhibits developmental differences (Child Care Law Centre, 2002) of which every centre has to make effort to help accommodate as quickly as possible to reduce delay or interruption of care (Aronson, 2002). According to Rowell (2009), written health and safety policies at ECCD centres are very important because they form the basis of quality practice as it provides information not only on what needs to be done but how and also why it needs to be done to protect the health and safety of the children.

It is therefore a recommendation that all ECCD centres have written policies to inform both parents and teachers about the general rules and procedures to follow at the centre to ensure children are safe and healthy such as what to do when children are sick, when there are emergencies, among others (NACCRRA, 2007). According to American Academy of Pediatrics (2011), ECCD centre policies have to vary depending on the ages and abilities of children in the centre to have room for special health care needs.

Safety practices

It is recommended that dangerous things that can cause injuries such as uncovered wiring, worn-out building material, stained classroom surfaces, patched floors and crack walls as well as things likely to cause fire outbreaks

such as rubber, papers, furniture and wirings must be avoided in the ECCD centre to ensure health and safety (Fadeyi, Alkhaja, Sulayem & Abu-Hiljeh, 2014).

When it comes to safety of children in ECCD centres supervision is very important and so it is recommended that teachers or care givers have to directly supervise infants, toddlers and preschoolers by sight and hearing at all times, even when the children are going to sleep, napping or sleeping, are beginning to wake up, or are indoors or outdoors (American Academy of Pediatrics, 2011). Etzel and Balk (2011) reiterated that supervision is basic to safety and the prevention of injury as well as the maintenance of quality care in ECCD centres and also recommended that when children are at play areas there should be an assigned and trained adult to supervise them.

Also to ensure that children are protected from harm and all sort of abuse including sexual abuse, it is recommended that arrangements at ECCD centres should be such that it reduces instances where an adult or older child is left alone with a child without another adult present (U.S. Environmental Protection Agency, 2014). Children at ECCD centres also needs to be served with nutritious foods and snacks, encouraged to try new foods, supervised when eating and those with allergies must be noted (NACCRRA, 2007).

Research on Health and Safety Standards' Compliance in ECCD Centres

A study by Crowley, Jeon and Rosenthal (2013) which aimed at assessing the prevalence of regulatory noncompliance of licensed child care centres in Connecticut, found that most of the 676 centres were compliant with a majority of the child care regulations. A study in Indiana which aimed at describing the ECCD programs that met the key national health and safety

standards (NHS), also revealed that all the 82 ECCD programs involved in the study met the majority of NHS items (Alkon & Cole, 2012).

Another study that aimed at determining the preparedness of child care centres in Pennsylvania to respond to emergencies and disasters based on compliance with the national health and safety standards revealed that of the 496 ECCD centres, majority were compliant with the recommendations (Olympia et al., 2010). Two health intervention studies in ECCD programs showed improvements in programs' compliance with the national health and safety standards, especially in areas such as hand washing, written health policies as well as adherence to food preparation and emergency preparedness standards (Alkon *et al.*, 2009; Kotch *et al.*, 2007).

An observational study in Dutch daycare centres found that compliance with hand hygiene guidelines was generally low and that hands were adequately washed in less than half of all hand hygiene opportunities, compliance was 42% (Zomer, Erasmus, van Beeck, Tjon-A-Tsien, Jan Hendrik Richardus & Voeten, 2013). Another study of 127 ECCD centres in California found that the majority of the 66 national health and safety checklist assessed were not completely met (Alkon et al, 2008). A study in Southern Ghana which assessed the knowledge of infection prevention in ECCD centres in the Suhum Municipality revealed that the teachers had good knowledge about infection prevention measures and control but did not translate into practice due to the non-availability of resources for the implementation of infection prevention (Siakwa & Offie, 2016).

An observational study in child daycare found that for hand hygiene compliances to be effective, factors to consider include availability and

number of sinks, towel and soap facilities as well as availability of alcoholbased hand sanitizers (Zomer *et al.*, 2013). The findings of the study also showed a significant association between the type of towel facilities and hand hygiene. Even though WHO (2009) recommends the use of alcohol-based hand sanitizers because of their remarkable impact on improving compliance with hand hygiene and ensuring clean, safe hands, a study in Ghana indicated that alcohol-based sanitizer were not readily available for teachers and school children for use during hand washing in the Suhum Municipality (Siakwa & Offie, 2016).

In expressing the challenges they go through to meet infection prevention measures, a higher number of the public school teachers in rural communities in Ghana explained that they could not attend to children who soiled themselves with faeces and urine but rather had to let the children go home for them to be cleaned up because parents were not buying toiletries such as detergents, antiseptic, soaps and tissues like parents in urban centres which was mandatory for them to buy (Siakwa & Offie, 2016).

Research on ECCD Centre Characteristics

The ownership of a child care centre (auspice) is considered as an important indicator of quality in child care and research has indicated noticeable differences between public and private ECCD providers in terms of staff qualification requirements and adult-child ratios (Blanden, Hansen & McNally, 2017). A study by Bastos and Cristia (2012) in São Paulo found out that even though quality (as measured by teachers' schooling, group size and equipment) of ECCD programme provided by the private sector varied greatly depending on the district and locality, a substantial number of the private

ECCD centers operated below recommended (but not regulated) quality standards, especially in low-income districts. Other studies have also indicated that quality and qualifications of teachers or caregivers in the private, voluntary and independent ECCD sector is a concern as quality is constantly lower compared to those in the state-managed sectors (Sylva, Meluish, Sammons, Siraj-Blatchford, & Taggart, 2010; Mathers, Sylva & Joshi, 2007).

However a study which used a randomly selected sample of public and private ECCD centres in Istanbul to evaluate the quality of ECCD classrooms found that the private sector handles daily routines and teacher-parent interactions more effectively even though both types of centres had significant shortcomings ranging from physical infrastructure to teacher-pupil interactions (Göl-Güven 2009). According to Haskins and Barnett (2010) there has been argument that government-funded ECCD programmes such as childcare centres, Head Start and state-funded prekindergarten provide services that are of 'mediocre or worse' quality.

The private sector has played an important role in increasing access to ECCD education in Ghana, especially in urban areas and parents know of almost 4 ECCD centres within a walking distance from their home (Bidwell et al., 2014). According to Akyeampong *et al.* (2012), evidence suggests that quality in public schools were becoming a concern and that even poor households were disillusioned with public education and were rather opting for private schools which were relatively costly compared with the public schools in Ghana. Reasons provided by households for choosing private over public schools came from perceptions of the failings of the public systems and that the public schools were insensitive to concerns about poor academic

performance and supervision of children's work was generally poor (Akaguri, 2010).

A quantitative comparative study conducted by Siakwa and Offie (2016) in the Suhum Municipality of Ghana revealed there was a statistically significant difference in resource availability to private teachers and public teachers which also resulted in better practice of infection prevention among teachers in private centres. Other research works have looked into auspices focusing on the mixed-sector market of for-profit and non-profit ECCD providers and in examining for-profit child care from the past through to the future, Prentice (2005) reiterated the fact that research literature in several countries since 1984 up to 2005, had documented the clear trend of higher quality in non-profit child care.

According to Childcare Resource and Research Unit (2011, p.2) "in order to find funds to ensure profits, profit-making operations were more likely to skimp on staffing, supplies, equipment and perhaps even food". And that "research shows them to be more likely to hire less well-trained educators, to pay lower wages and benefits and to engender working conditions that lead to higher rates of turnover and lower morale". Sosinsky, Lord and Zigler (2007), in an effort to do a secondary analysis of the National Institute of Child Health and Human Development Study of Early Child Care and Youth Development data, found that quality was generally higher in non-profit centres, and forprofit status predicted lower quality positive care giving among children aged 5.

Analysis of four different Canadian datasets revealed a strong indication of non-profit superiority in providing quality child care services across all the

data studied (Cleveland, Forer, Hyatt, Japel & Krashinsky, 2007). Another analysis by Cleveland (2008) involving Toronto Operating Criteria, found that consistently quality was higher in non-profits than for-profits infant, toddler and preschool groups. Confirming these previous research is a recent study which examined differences in classroom quality among infants and toddlers and compared quality across programme type (for-profit to not-for-profit) found out that classrooms in not-for profit programmes scored higher on safety and organization as well as parents and staff factors (King, Pierro, Li, Porterfield & Rucker, 2016.)

Research on Quality of Physical Environment of ECCD Centres

Reports over the years have established the susceptibility of particularly children to negative health impacts of their degraded or unsafe environment (United Nations Environment Programme [UNEP], 2016) Reports indicate that while 23% of all deaths globally are linked to environmental factors, when it is shared, the percentage rises to 26 % for children under the age of 5 (UNEP, 2016) and as a matter of fact, more than one quarter of the 6.6 million under-five child deaths every year are associated with environment-related causes and conditions (Prüss-Ustün, Wolf, Corvalán, Bos, & Neira, 2016).

Optimal locations for ECCD programs should be away from factories, highways, gas stations, agricultural businesses that use pesticides (Children's Environmental Health Network. 2010). transportation corridors, bus stops, abandoned lots, landfills, military bases, utility plants and construction sites, particularly because these may present health problems to the students and staff who occupy the school (WHO Information Series on School Health, 2003).

Physical designed environment

According to Moore (2002 as cited by Azhari, Qamaruzaman, Bajunid & Hassan, 2015), the physical designed environment of ECCD centre is defined as the size, density, privacy, activity settings, modified open-plan space, technical design features and the quality of outdoor play spaces. These according to Azhari *et al.* (2015) are the features to be considered if ECCD centres are to ensure that children under their care grow healthily and physically develop well. Research has shown evidence of a correlation between ECCD centre design and positive development among preschool children (Abbas & Ghazali, 2010). Another study has found that when the physical environment is comfortable it influences children's play behavior, leading to learning (Abbas, Othman & Rahman, 2012).

Emphasis has also been laid on the fact that ECCD centre environments for babies and toddlers should be calm, quiet and not over-stimulating, providing enough room for comfort, feeding and uninterrupted sleep (Dalli *et al.*, 2011). A study in England also found that children in centres with higher quality physical environments (spacious, well maintained, with appropriate furniture for care routines and educational activities, and comfortable areas for children to relax and spend quiet time) displayed fewer worried and upset behaviours (Smith, 2007). Other studies have also found that indoor and outdoor spaces, equipment and learning materials, which are appropriate and stimulating, safe and protective, have an impact on children's learning opportunities, their physical activity, and their health and safety (Dalli & Rockel, 2012; Dalli et al., 2011; Expert Advisory Panel on Quality Early Childhood Education and Care, 2009).

Research has also shown that good quality physical environments in ECCD centres is helpful for young children from disadvantaged backgrounds as they provide access to learning materials and experiences not provided in their homes(Dearing, McCartney & Taylor, 2009). However evidence also show that poor facilities and spatial quality affect teachers' motivation and indirectly affect children education (Salleh, Kamaruzzaman & Mahyuddin, 2013).

Indoor spaces

A research that aimed at identifying the social and environmental factors associated with preschoolers' non-sedentary physical activity found that sedentary behavior characterized 84% of the intervals observed indoors in preschools (Brown, Pfeiffer, McIver, Dowda & Addy, 2009) but then it has also been observed that the routine that stands out when it comes to factors that can influence active behavior in children in indoor environment of ECCD centres, is the use of equipment and the size of the area available for play (Gubbels, Van-Kann, & Jansen, 2012).

Child Care Division Ministry of Community Development, Youth and Sports (2011) recommends that both indoor and outdoor spaces in ECCD centres should be at least 30m² or one-fifth of the centre's capacity at 5m² per child. An ECCD centre's capacity is determined by space for indoor activities which is calculated based on the minimum space requirement per child which is 3m² of usable floor space, excluding service areas (Child Care Division Ministry of Community Development, Youth and Sports, 2011). For infant care, the minimum space requirement per infant is 5m² excluding space for service areas, entrance, hallways and passage ways as well as the diapering

areas (Child Care Division Ministry of Community Development, Youth and Sports, 2011).

Barbosa, and Oliveira (2016), concluded in a review that, some actions that help increase the level of daily physical activity among preschool children includes: the space provided inside for games, floor markings for play, jumping and climbing equipment as well as outdoor games. In line with this conclusion is a study that aimed at determining the factors associated with higher levels of moderate to vigorous physical activity (MVPA) among a large sample of ethnically diverse, low-income U.S. preschoolers which found out that several aspects of the indoor environment were associated with MVPA, which indicated that the indoor area was not to be overlooked as an important site for physical activity (Henderson, Grode, O'Connell & Schwartz, 2015).

Studies that have investigated the relationship between childcare centres and preschoolers' physical activity have established among others the association of high physical activity among children who attend pre-schools with sufficient indoor play spaces than those who attend schools without such supportive environment and infrastructure (Barbosa, Coledam, Neto, Elias and Oliveira 2016; Cardon, Van Cauwenberghe, Labarque, Haerens & De Bourdeaudhuij, 2008; Dowda, Pate, Trost, Almeida, & Sirard, 2004; Pate, Pfeiffer, Trost, Ziegler & Dowda, 2004).

A study in Canada indicates that increased physical activity among preschool children is associated with reduced obesity, motor skill development, psychosocial health and cardio-metabolic health (Tremblay, LeBlanc, Carson, Choquette, & Gorber, 2012). It is therefore recommended that since play and movement are important for brain development, preschool

children should be exposed to activities that promote development of fine motor and gross motor skills (Learning & Teaching Scotland, 2010).

Overcrowding in ECCD centres

Other features of the physical environment of ECCD centres which have been found to impact on children's health include numbers of children in the centre and noise levels (Dalli, White, Rockel & Duhn, 2011). Research has shown that crowded and noisy environments can have effect on children's stress levels and development, especially for children with special needs or with chronic ear infections (Bedford & Sutherland, 2008). Children are likely to have high stress level as a result of increase production of cortisol in the body due to psychological distress from overcrowding (Legrendre, 2003) and if they are exposed to crowding in several environments such as both at school and at home, then they are likely to experience poor mental health outcomes (Evans, 2006).

Research across varying cultural contexts by Evans (2006) has shown that crowded school and home environments significantly affect the behavior and socio-emotional functioning of both children and their parents. The research by Evans found that children in more crowded preschools and elementary schools exhibited more aggressive behaviors towards their classmates. And this behavior was attributed to one of the factors believed to be a drive, which is conflict over scarce resources such as toys. The findings of the study (Evans, 2006) also documented the impact of crowding on object spatial relations, reading and comprehension, and general IQ and school achievement of children.

In a review of the evidence base on early childhood care and education in global context (Yoshikawa & Kabay, 2015), it was reported that even though Ghana has made progress in the field of ECCD, quality is a critical concern and that many kindergarten programs were challenged with overcrowding.

Outdoors spaces

Time spent in outdoor areas as well as opportunities to engage with natural materials has been pointed out as an essential way of promoting good learning and development among preschool children (Expert Advisory Panel on Quality Early Childhood Education and Care, 2009). Notably, research has indicated that three to five year olds in ECCD centres are most likely to be physically active when playing outdoors (Brown *et al.*, 2009). It has also been found that spending some time in the sun during outdoor play helps improve children's health and minimize the risk of sick building syndrome which is usually linked to inadequate contact with natural daylight and fresh air in indoor settings (Joshi, 2008).

According to Child Care Division Ministry of Community Development, Youth and Sports, (2011), an ECCD centre must have access to outdoor play space apart from indoor space and if it is not possible, there should be an additional indoor gross motor activity areas or gym. Even though it has also been acknowledged that motor activity spaces take up a lot of room and are very expensive (Moore, 1997), the benefits of having such a facility for the children cannot be overlooked. Physical motor activities are essential to the health and general wellbeing of young children as it promote healthy cognitive development, weight gain, good cardiovascular condition (Timmons, Naylor & Pfeiffer, 2007) as well as lower adiposity and increased bone density (Timmons et al., 2012).

A systematic review with children aged one month to four and a half years revealed that increased physical activity in preschool-aged children have be associated with decreased adiposity, improved motor skill development, better psychosocial health, and favorable cardio-metabolic risk indicators (Timmons et al., 2012). This finding is similar to a research conducted by the Taskforce on Childhood Obesity Prevention in North Carolina (Moore & Marcus, 2011) that used an Outdoor Learning Environment Rating Scale to evaluate the opportunities children had for interaction with nature and found that less than 10 % of preschool settings rated as good.

Even though since the mid-century, more spaces have been planned and designed with children in mind (Woodhead, 2009), especially in schools and playgrounds, most schoolyards all over the world were just flat, hard, open surfaces that reflected a traditional belief that children's learning only took place in the classroom but not until relatively recently when things are improving (Brooker & Woodhead, 2012). There is evidence that children benefit in overall well-being as well as physical health when their preschools provide substantial opportunities for outdoor play and contact with nature (Fjortoft, 2004; Wells, 2000). Other evidence also prove to the fact that green spaces such as trees, grass, garden and other plants in schools and even urban housing projects, offer children a way of playing and learning that stimulates the development of the mind, body and soul (Sharp, 2007; Taylor, Kuo & Sullivan, 2001a, 2001b).

Research has also shown that lack of physical activity in childhood is associated with physical inactivity in adolescence and adult life (Barros, Lopes & Gomes de Barros, 2012) and also related to various health risk conditions in adulthood (Craigie, Lake, Kelly, Adamson & Mathers, 2011). It has also been found that low level of moderate to vigorous physical activity is highly associated with higher rates of cardio vascular risk in children from 8 to 11 years (Tanha et al., 2011). The importance and influence of the physical environment on children' development cannot be over emphasized, particularly as several research findings have indicated the role the physical environment and its guality play in conjunction with other factors in determining the quality of teaching and learning, educator's effectiveness as well as children's performance and overall development (Bullard, 2009; Earthman, 2002; Fisher, 2001; Germanos, 2002, 2004; Higgins, Hall, Wall, Woolner, & McCaughey, 2005; Maxwell, 2007; Proscio, Sussman, & Gillman, 2004; Rentzou, 2011; Sanoff, 2001; Schneider, 2002; Watson, 2004). Research Works Assessing Quality of Physical Environment of ECCD Centres

Research works that focused on assessing the quality of physical environments of ECCD centre have shown varied results. A study conducted by Love to Play (2017) to assess the impact of indoor environment on opportunities for different types of play among preschool children, found that all the three centres involved in the study had overall 'good' quality indoor spaces for supporting children's development. The centres also had 'good' Modified Open Space, Home Bases, and Messy Activity Areas.

Another study that assessed the quality of the physical environment in 12 ECCD centres (both public and private) in Greece found that quality of physical environment of the centres were of minimum quality in both infant/toddler and preschool classrooms (Rentzou, 2014). A study that also assessed the quality of the physical environment of 80 randomly selected registered ECCD centres in Kuala Lumpur and the Klang Valley in Malaysia found that overall quality of physical environment of the centres was low (Hassan, 2012). An earlier study by Hassan and Moore (2010) found that ECCD centres in Malaysia rated fair on the quality of physical environment in their centres.

A similar research which aimed at exploring ECCD programmes in periurban settings in Africa found that basic infrastructures, such as latrines and playground, enclosure around the school, and electricity, were largely available in preschools in Soweto (South Africa) and Ashaiman (Accra, Ghana). In Agege (Nigeria), most were available except for playgrounds but these infrastructures were lacking in substantial proportion of preschools in Mukuru (Bidwell, Watine & Perry, 2014). The study further indicated that when it comes to Ashaiman, school infrastructure was generally satisfactory (Bidwell *et al.*, 2014).

Another study which aimed at evaluating preschool programs of selected schools for the deaf in Ghana which included Cape Coast, Sekondi, Kibi, Koforidua, and Mampong Akuapem Schools for the Deaf found that that majority (76%) of the teachers in the preschools for the Deaf agreed that most preschools for the hearing impaired had environments and indoor and outdoor learning spaces that were conducive (Larbi, 2011). However the researcher

reported that from observations made, play grounds were not spacious enough for the preschoolers to play on and most of the classrooms were not spacious enough to accommodate the children and their indoor equipment (Larbi, 2011).

Early Childhood Care and Development Provision in Ghana

According to Morrison (2001), history has it that Early Childhood education in Ghana dates back to the colonial years and it was around 1745 that in an effort to promote Christianity, the missionaries established the first recorded educational program which included young children. Subsequently around 1843 the British Based Mission Society attached kindergartens to primary schools and in 1930 a formal declaration was made to address Early Childhood education, including a syllabus for infant classes (Morrison, 2001). The Nursery and Kindergarten Unit was created around 1965 to develop preschools as well as assist in the evaluation, control, and registration of these institutions (Bidwell *et al.*, 2014).

According to State University.com (2018), even though there is no evidence to demonstrate how successful they were, it has been sufficiently proven that Dutch, Danish. and English companies operated schools on the Gold Coast, and that instruction in reading, writing, and religious education took place within the castle walls. State University.com also indicated that the best known Castle Schools on the Gold Coast included the one operated by the Dutch at the former Portuguese fortress at Elmina, the British school at Cape Coast Castle. and the Danish school at Christiansburg, near Accra.

Preschool was not part of the formal education system in Ghana until 2002, when the White Paper Report on Educational Reform Review Program

stated that kindergarten education should progressively become part of the Free Compulsory Universal Basic Education (fCUBE) structure and subsequently a Second White Paper in 2007 led to the enactment of the 2008 Education Act, which added formally two years of kindergarten education to free and compulsory education (Bidwell *et al.*, 2014). Currently the Early childhood education structure is in three parts consisting of Crèche (which is mainly a daycare facility in which children 0-2 years sing, play games and sleep).

The second part is the Nursery (covers children form 2-4 years and is usually divided into Nursery one [2-3 year olds] and Nursery two [3-4 year olds]) and Kindergarten (KG) which cater for children 4-6 years and is also subdivided into KG1 (4-5 year olds) and KG2 (5-6 year olds). The crèche and nursery education in Ghana still remains outside the formal education system, and the sector is supervised by the Department for Social Welfare who is also responsibility for the registration and maintenance of standards. The Ghana Education Service supervises the KG which is part of the Free Compulsory Universal Basic Education (fCUBE) structure (Bidwell *et al.*, 2014).

Ghana rectified the Convention on the Rights of the Child and Article 28 of 1992 Constitution mandated Government to ensure the Rights of the Child and so the establishment of the Children's Act (Act 560) in 1998 demonstrated Ghana's commitment to the promotion of the physical, mental and social wellbeing of the Ghanaian child (Republic of Ghana, 2002). In 2004 the National Early Childhood Care and Development policy was adopted (UNICEF, 2011). The Early Childhood Care and Development (ECCD) Policy of Ghana provides the broad policy goal which is to promote the survival,

growth and development of all children (0 - 8 years) in Ghana and to ensure improved standard of living and enhance quality of life for families in Ghana (Republic of Ghana, 2002).

In the ECCD policy document section 5.6 which talked about providing quality ECCD, it was acknowledged that

"There are inadequate educational and on-the-job training for child-care givers. Minimal regulation of staff and programme quality relegates child-care to a low status and low paying occupation. Most pre-schools, especially those in the rural areas, lack proper health care surveillance, recreational facilities and play things and good physical infrastructure. It is important that these issues are adequately addressed in order to improve not only access to, but the quality of, ECCD services to children. Appropriate guidelines will therefore be set to regulate the establishment and performance of these programmes"

In order to ensure that preschools are run correctly, the Government has set up a National Nursery Teachers' Training Centre where Certificated Teachers, who want to specialize in Nursery Education and Nursery Attendants, are trained to go to both Public and Private Nursery Schools. Teacher Training Colleges and Universities are also training students to acquire diploma and degrees in early childhood education and there is also an eight week in-service training programme which gives a certificate of participation, all aimed at ensuring that children gain a holistic standard of education (UNICEF, 2011).

Over the years, Ghana has seen a shot up in the preschool enrolment which has even exceeded the nation's target of both gross and net enrollment

ratios as at the 2013/14 academic year (UNESCO, 2015) and the World Bank has reported that Ghana's preschool enrolment rates are some of the highest in the West African region (Aber *et al*, 2016). The increase in enrolment is probably due to policy changes such as the inclusion of two years of kindergarten into the free and compulsory basic education systems and the provision of capitation grants to the schools that might have influenced the decisions of families to send their children to school.

A report from the Ministry of Education (2013) indicated that an average class sizes of 64 children in K.G., made it difficult for teachers to assess the progress of each individual child and that the current classroom sizes were not big enough to allow for 'break out' spaces or learning centres which supported child-centered active learning and there were also little support for varied indoor and outdoor learning environments. However the under the new "Education Strategy Plan 2010-2020", the government of Ghana has prioritized that form the period up to 2020 it will expand and improve comprehensive early childhood care and education (Bidwell *et al.*, 2014).

Chapter Summary

NOBIS

This chapter drawing on a combination of related theories and research established that an ECCD programme which is of a high quality is the type that provides safe and nurturing environment that helps young children to develop physically, socially, emotionally and cognitively. There are also recognizable factors that determine the health and safety conditions of ECCD centres. The literature review therefore informed the research problem, purpose and questions presented in Chapter One. To address the research gab in determinants of health and safety conditions of ECCD centres, the chapter

developed a conceptual framework to guide the study. Thus this chapter provided a solid foundation on which health and safety conditions of ECCD centres can be assessed. The next chapter presents the research methods used in the study.



CHAPTER THREE RESEARCH METHODS

The study is a mixed methods research. The purpose of the study was to assess the health and safety conditions of Early Childhood Care and Development (ECCD) centres in the Cape Coast Metropolis of Ghana and to identify the determinants of the health and safety conditions. This chapter is under the following sub-headings:

- 1. Research Design
- 2. Study Area
- 3. Population
- 4. Sampling Procedure
- 5. Data Collection Instruments
- 6. Data Collection Procedure
- 7. Data Processing and Analysis

Research Design

The study was conducted using a mixed methods research design. A mixed methods research design according to Creswell and Plano Clark. (2011) is a procedure for collecting, analyzing, and "mixing" both quantitative and qualitative methods in a single study or a series of studies to understand a research problem. Creswell (2012) emphasized that the basic "assumption of mixed methods research design is that the use of both quantitative and qualitative methods, in combination, provides a better understanding of the research problem and question than either method by itself" (p. 535).

Mixed methods design was adopted because there was a need to follow up on the quantitative phase of this study with a qualitative one to get more detailed information about the quantitative findings. Specifically an explanatory sequential mixed methods design was used in this study. This design involves first, the collection of quantitative data and then a collection of qualitative data to help explain the quantitative results (Creswell, 2012). Figure 10 shows the visual model of the explanatory sequential design.





The reason for using the explanatory sequential approach was that the quantitative data of the study provided a general picture of the health and safety conditions of the ECCD centres in the Cape Coast Metropolis. I however wanted to have more understanding of some of the quantitative results and so the qualitative data was collected. The qualitative phase provided an explanation to the general picture painted by the quantitative results and so both results complemented each other.

In the study, the two forms of data collected were kept separate but were connected during the phases of the research. I began the study first with the quantitative phase where I collected and analysed the data. There were some findings from the quantitative analysis that I needed explanations as to why

that were the case. I therefore used the quantitative findings to identify the questions that were asked as well as the selection of participants for the qualitative data collection which was the second phase of this study. The integration of the quantitative and qualitative data was done first after the data analysis of the first phase where the results were connected to the second phase and finally the two data were merged at the interpretation stage.

In terms of weighting, priority was given to the quantitative data. This is because the study's main focus was on the quantitative phase but the qualitative phase was a follow-up on some findings from the quantitative analysis. The philosophical viewpoint adopted by this study was that of a pragmatic approach which draws heavily on both inductive and deductive reasoning (Ihuah & Eaton, 2013) and the theoretical lens was implicit. Figure 8 shows the diagram of how the explanatory sequential design was used in the study.

For the quantitative phase of this study a cross-sectional descriptive approach was used. This involves gathering of data that describes the state, form or magnitude of phenomena at one point in time (Ogah, 2013) and also helps in exploring phenomena at a time when much is not yet known or when something is being described for the first time. According to Cohen, Manion and Morrison (2007), the snapshot data collected from a cross-sectional study gives the researcher the opportunity to do either retrospective or prospective enquiry. Based on the above assertions, a cross-sectional descriptive approach was considered appropriate for the first phase of the study because the quantitative phase of this study aimed at getting a snapshot or a picture of the health and safety conditions of ECCD centres in the Cape Coast Metropolis.



Figure 8: Explanatory Sequential Mixed Method Design used in the Study.

The second phase of this study explored the views, opinions and perceptions of some Heads or Coordinators of the ECCD centres as well as some of the ECCD teachers regarding the health and safety conditions of ECCD centres in the Cape Coast Metropolis through follow up interviews.

With the aim of exploring their subjective experiences, a phenomenological approach was adopted. Denscombe (2007) asserted that a phenomenological approach usually deals with individuals' perceptions, attitudes, beliefs, feelings and emotions. This approach was used because I needed the perceptions of the Heads and teachers on some of the quantitative findings and it was through this approach that it was intended to get the possible explanations for the quantitative findings.

The researcher's role

Creswell (2007) asserted that the role of the researcher particularly in qualitative research as the primary data collection instrument makes it necessary that the researcher identifies his or her personal values, assumptions and biases at the beginning of the study especially as the researcher's contribution to the research setting can be useful and positive rather than detrimental (Locke et al, 1987 as cited in Creswell, 2007). My interest as a researcher in the health and safety of children in Early Childhood Care and Development centres has been shaped by my personal experiences.

I got pregnant in the first year of marriage but my baby died in my womb at 8 months and was removed through surgery (caesarean section). After this incident several pregnancies were lost and could only have a stable pregnancy after five years in marriage. My baby was delivered through another caesarean section. My whole life after that was to ensure that my child was kept healthy and safe. But I had to let my child go to "school" at age two because of my work. I also knew my child needed to have interactions with other children to help her grow. My concern as a mother was which ECCD centre to send my child to where she would be taken good care of and kept safe.

My interactions with other parents who had experienced ECCD centres brought fear to me as I heard of some of the serious health and safety issues at some of the ECCD centres. These included infections, negligence and even in one case the death of a child. I therefore visited and evaluated several ECCD centre options before settling on a centre to send my child. I believe my experiences and my understanding of the context enhanced my awareness, knowledge and sensitivity to many of the health and safety challenges and issues encountered by ECCD centres in the Cape Coast Metropolis. This helped me in working with the participants in this study.

I brought to the study, knowledge of some of the health and safety practices as well as some challenges faced by ECCD centres. Due to previous experiences working closely with the ECCD centre my child was attending, I brought certain biases to the study. I made every effort to ensure objectivity in the study. These included maintaining faithfulness to the participants' constructs and interpretations of the data was grounded by constantly crosschecking my interpretations with the original transcripts.

However these biases of mine might have shaped the way I viewed and understood the interview data collected and the way I interpreted my experiences. This study was started with the perspective that ECCD centres had issues with meeting the health and safety needs of children especially as ensuring that children are healthy and safe perhaps requires financial commitment.

Study Area

Cape Coast Metropolis is bounded on the south by the Gulf of Guinea, on the east by Abura-Asebu-Kwamankese, on the west by Komenda-Edina-

Eguafo-Abrem and on the north by Twifo-Heman-Lower-Denkyira Districts. Figure 9 shows the map of Cape Coast Metropolitan Area in relation to the Central Region and Ghana as a whole.



Figure 9: A map of Cape Coast Metropolitan Area. Source: Department of Geography and Regional Planning, UCC (2011).

The Metropolis is the smallest district in the Central Region, covering an area of 122 sq. km and located on latitude 5° 06' north and longitude 1° 15' west. The Cape Coast Metropolitan Area had 71 settlements in 1984. Cape Coast was the only noticeable urban centre in the metropolitan area in 1984 with a population of 65,763. Cape Coast, as the capital of Central Region, was once the capital of the then Gold Coast in the 18th century and a slave market

with a magnificent castle and two forts. These antiquarian relics attract thousands of tourists from all over the world each year.

The city enjoys a moderately brisk business climate including petty trading, crafts and other manufacturing, institutional workers, professionals (largely teachers) and agriculture (farming, fishing) and fish processing forming a major part of the economic life of the people especially at the coastal settlement (Cape Coast Metropolitan Assembly, 2014). The 2010 Population and Housing Census Report by the Ghana Statistical Service (2014) indicates that the Metropolis has a total population of 169,894 consisting of 82,810 males (48.7%) and 87,084 females (51.3%). The Metropolis is predominantly urban with three quarters (130,348) of the population residing in urban areas compared to 39,546 (23.3%) in rural settlements (Ghana Statistical Service, 2014).

Table 1 shows the population by sex in the twenty largest communities in the Cape Coast Metropolis of Ghana. Education in Cape Coast started with the introduction of what is popularly referred to as the castle schools, where notable Ghanaians like Philip Quaque, were educated. According to the Education Management Information System (EMIS, 2015), the number of basic and second cycle schools in the Metropolis as at December 2014 stood at 291 and 18 respectively. The city is often referred to as the citadel of education in Ghana.

The city also boasts of some of Ghana's finest secondary and technical schools including; Wesley Girl's High School, St. Augustine's College, Mfantsipim School, Ghana National College, Holy Child Senior High School, Adisadel College and Cape Coast Technical Institute.

| S/No | Community Name | Male | Female | Total |
|------|-------------------------------|-------|--------|---------|
| 1 | Cape Coast | 52526 | 55848 | 108,374 |
| 2 | Amamoma | 4352 | 3337 | 7.689 |
| 3 | Kakomdo | 2478 | 5081 | 7559 |
| 4 | Ekon | 2810 | 2696 | 5,506 |
| 5 | Nkanfoa | 2259 | 2424 | 4683 |
| 6 | Akotokyir | 1556 | 1536 | 3092 |
| 7 | Anto Esuekyir | 1453 | 1597 | 3050 |
| 8 | Kwaprow | 1668 | 1249 | 2917 |
| 9 | Kokoado | 1406 | 1464 | 2870 |
| 10 | Apewosika | 1594 | 1198 | 2792 |
| 11 | Ankaful Villag <mark>e</mark> | 1270 | 1404 | 2674 |
| 12 | Senewin | 892 | 770 | 1662 |
| 13 | Esuekyir | 751 | 883 | 1634 |
| 14 | Amisano | 758 | 743 | 1501 |
| 15 | Amoyaw 💦 🔥 | 69315 | 717 | 1410 |
| 16 | Duakor | 649 | 702 | 1351 |
| 17 | Kwesipra | 737 | 525 | 1262 |
| 18 | Nanabakrom | 632 | 545 | 1177 |
| 19 | Mpeasem | 522 | 567 | 1089 |
| 20 | Ebubonko | 510 | 451 | 961 |

Table 1: Population by Sex of Twenty Largest Communities in the Cape Coast Metropolis

Cape Coast Metropolis is the seat of the University of Cape Coast (UCC), one of Ghana's leading universities in teaching and research. The metropolis also has Cape Coast Polytechnic situated in it. I chose to conduct the study in the Cape Coast Metropolis because if the history has it that early childhood education in Ghana started in the castles and among the best known Castle Schools on the Gold Coast included the one operated by the British school at Cape Coast Castle (State University.com, 2018), then it is important that we know the state of affairs over the years that ECCD has expanded. Hence the study of the health and safety conditions in ECCD centres in the Cape Coast Metropolis.

Population

The population for this study comprised two groups. The first group consist of all registered ECCD centres in the six circuit areas within the Cape Coast Metropolis of Ghana and the second group comprised all the teachers and Head teachers in the ECCD centres. According to EMIS (2015), there were 163 registered ECCD centres in the Metropolis, 46 private crèches, 61 private kindergartens and 56 public kindergartens. Enrolments in crèche and kindergarten in the Metropolis as at May 2015 stood at 4,600 and 6,877 respectively.

The specifics were: Kindergarten – Public (KG1= 1,802, KG2= 1,687), Private (KG1= 1,668; KG2= 1,720). Crèche is privately managed in Ghana. The total number of teachers in the ECCD centres in the Metropolis as at May, 2015 was 544. One hundred and thirty eight (138) of the teachers were with the crèche and 406 were with the kindergarten. In all, 256 were trained teachers and 288 un-trained teachers.
Sampling Procedure

For the first phase (quantitative) of this study, I used census and for the second phase (qualitative) purposive sampling technique. A census study according to Ogah (2013) allows the researcher to collect information on each member of the population. The census in the first phase of the study involved all the registered ECCD centres that were in existence which was 160. The EMIS (2015) records had indicated however that there were 163 centres in the Metropolis but when I got to the field, 160 centres were in existence. The other three centres had either relocated or closed down.

Table 2 presents the characteristics of the ECCD centres used in the study. All ECCD Heads or Coordinators of the registered ECCD centres totalling 160 were used. All ECCD teachers in these registered centres totalling 462 were also involved in the study. Table 3 presents the demographic characteristics of the ECCD teachers in the Metropolis used in the quantitative phase. I chose the census approach because I wanted to have a broader view of the health and safety conditions on the ground and I believed that involving all the members of the targeted population was the best way to achieve that.

Table 2: Frequency Distribution of ECCD centres in Cape Coast Metropolis by Auspices

| ECCD centre Characteristics | Frequency | Percentage |
|-----------------------------|-----------|------------|
| Public | 59 | 37 |
| Private | 101 | 63 |
| Total | 160 | 100 |

| 1 | Feacher Characteristics | Frequency | Percentage |
|---|------------------------------|-----------|------------|
| (| Gender | | |
| | Male | 25 | 5 |
| | Female | 437 | 95 |
| ľ | Marital Status | | |
| | Married | 186 | 40 |
| | Single | 276 | 60 |
| 1 | Age | • | , |
| | Below 21 | 28 | 6 |
| | 21 - 30 | 269 | 58 |
| | 31 - 40 | 95 | 21 |
| | 41 - 50 | 39 | 8.3 |
| | 51 - 60 | 24 | 5.1 |
| | 61 and above | 7 | 1.4 |
| 1 | Auspices Teaching | | |
| | Public | 114 | 25 |
| | Private | 348 | 75 |
| 9 | Specialised Training in ECCD | | |
| | Yes | 193 | 42 |
| | No | 269 | 58 |
|] | Educational Qualification | | |
| | Primary | 2 | 0.4 |
| | Junior High School | 16 | 3.5 |
| | Senior High School | 250 | 54.1 |
| (| College of Education Diploma | 134 | 29 |
| | Bachelor's Degree | 55 | 11.9 |
| | Masters Degree | 5 | 1.1 |
|] | Experience | | |
| (| (Years in ECCD Field) | | |
| | Below 5 years | 311 | 67.2 |
| | 5 - 10 | 94 | 20.3 |
| | 11-20 | 43 | 9.2 |
| | 21-30 | 6 | 1.2 |
| | 31-40 | 8 | 2 |

Table 3: Demographic Characteristics of ECCD Teachers in the Cape Coast Metropolis

The advantage of using census in this study is that because the study is about the entire population, the question of generalisation does not arise and I do not need to worry about sampling errors (Ogah, 2013). For the second phase of the study, a purposive sampling procedure was used to get 16 respondents for the follow up interviews. Table 4 shows the demographic characteristics of the respondents used in the qualitative phase of the study.

| Respondent ID | Gender | Age | Centre Type | Experience | Qualification |
|------------------|--------|----------|----------------|------------|---------------|
| TR1 | Female | Under 35 | Public | 6 years | Diploma |
| TR2 | Female | Above 35 | Public | 12 years | Degree |
| TR3 | Female | Above 35 | Public | 24 years | NVTI/SHS |
| TR4 | Male | Under 35 | Private | 1 year | SHS |
| TR5 | Female | Under 35 | Public | 3 years | Degree |
| TR6 | Female | Above 35 | Private | 9 years | Diploma |
| TR7 | Female | Under 35 | Private | 6 years | Certificate |
| TR8 | Female | Above 35 | Public | 10 years | Degree |
| HR9 | Female | Above 35 | Public | 3 years | M.Phil |
| HR10 | Female | Above 35 | Public | 26 years | Degree |
| HR11 | Female | Under 35 | Private | 3 years | Degree |
| HR12 | Female | Above 35 | Public | 8 years | Degree |
| HR13 | Female | Above 35 | Public | 12 years | Degree |
| HR14 | Female | Above 35 | Private | 5 years | Degree |
| HR15 | Male | Above 35 | Private | 7 years | Degree |
| HR16 | Female | Under 35 | Public | 12 years | Degree |

Table 4: Demographic Characteristics of Respondents Interviewed

TR- Teacher Respondent, HR-Head Respondent

According to Ogah (2013), purposive sampling allows the researcher to deliberately sample particular elements for a study. The purposive sampling procedure was considered as the most appropriate due to the qualitative nature

of the research at this stage. I used this technique to get eight ECCD centre Heads and eight ECCD teachers who were involved in the interviews. These respondents expressed various concerns about health and safety issues at ECCD centres during the quantitative data collection phase and so I realised that they were the most appropriate participants to provide the explanations I needed for the quantitative results.

The advantage of purposive sampling decisions in this study is that it did not only influence the selection of participants alone but also the settings and activities for my data collection (Ogah, 2013).

Data Collection Instruments

Three instruments were used in collecting data for this study. These were observational rating scale (Children's Physical Environment Rating Scale), questionnaires (Centre Questionnaire and Health and Safety Practices Questionnaire) and the semi- structured interview guide.

Observational rating scale

The instrument used to assess the quality of the physical environment and infrastructure of the centres was adapted from an observation instrument developed by Moore and Sugiyama (2007), called "The Children's Physical Environment Rating Scale" (CPERS). The developers of the scale conceptualised the physical environment of ECCD centres into several parts (shown in figure 10) each of which was evaluated independently. The CPERS was divided into four main parts: Part A focused on the overall planning of the centre, Part B looked at the environmental quality of the building, its overall organization, image, and circulation. Part C assessed each module (class room) and spaces in which children spent most of their time, and then Part D

evaluated the outdoor activity area around the building and surrounding conditions.





There were several subscales within each section of the scale which comprised a number of items or descriptors of the environmental attributes that contributed to the overall quality of the facility as a centre for ECCD and education. The original CPERS consisted of 124 items organised into 4 parts of 14 subscales with each subscale having different items. But for this study. I modified the CPERS by reducing some of the subscales. The subscales removed include the subscale assessing 'Quiet' Activity Area' which had items on Reading Area, Manipulative (fine motor) Play Area and Computer Area. Under the subscale for 'Physical Activity Area', items measuring Music Area, Dramatic/Fantasy Play Area were also removed. Subscale assessing 'Messy Activity Area' which included items measuring Arts and Crafts Studio, Water Play Area, Science and Nature Area were also removed.

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I removed these subscales and items because they were not measuring health and safety issues but rather some of the education requirement aspects of an ECCD programme but the focus of this research was on issues relating specifically to health and safety conditions of ECCD centres. Therefore the modified CPERS used in this study (see APPENDIX A) consisted of 84 items organised into 4 parts of 12 subscales and they are as follows (with the numbers of items in each scale in parentheses):

Part A: Planning

This part evaluated the overall planning of the center including its size and capacity.

1. Center Size and Modules (2)

Part B: Centre as a whole

The subscales in this part were used to assess the major functions and overall qualities of the building as a setting for ECCD and education.

- 2. Image and Scale (6)
- 3. Circulation (6)
- 4. Common Core of Shared Facilities (12)
- 5. Indoor Environmental Quality (8)
- 6. Safety and Security (6)

Part C: Indoor activity spaces

The subscales in Part C applied to the spaces where children spent most of their time while in the building. These spaces included "home bases" and "activity areas".

- 7. Modified Open-Plan Space (6)
- 8. Home Bases (7)

9. Physical Activity Areas (5)

Part D: Outdoor spaces

The subscales in Part D assessed the outdoor areas of the centre.

10. Play Yards: Functional Needs (7)

- 11. Play Yards: Developmental Needs (8)
- 12. Location and Site (11)

The response format for each item was a 5-point linear numeric scale ranging from *Not Met* (score of 0) to *Fully Met* (score of 4). Some items asked about the existence of particular functions in the centre, the rater being asked to choose from *No* (0), *Shared* with other functions (2) and *Yes* (4). The responses also included "*Not Applicable*" for some items.

Validity of the CPERS

One of the most important characteristics of a good measuring instrument is its validity. Validity according to Ogah (2013, p.136) has to do with the appropriateness, correctness and precision of measuring instruments and also has to do with a measure of usefulness of inferences that a researcher can draw based on the information obtained through the use of the instrument. The CPERS was developed and refined in relation to theory, validation against the latest research in the field, cross-instrument reviews and content and construct validity check with experts in the field in the United States and throughout Australia and New Zealand (Moore, Sugiyama & O'Donnell, 2003).

In terms of content validity, 12 experts in the field considered the original 13 subscales to be important to the overall success of ECCD (mean importance was 2.73 to 3.65 on a 4-point scale, with an average of 3.26 out of 4). Using a different set of 13 experts in the discipline, construct validity was 100



also judged very high (correlations between their own ratings of centres followed by using the CPERS Scale ranging from 0.85 to 0.92, were all highly significant at the p < .01 level of significance). What I did to check the validity of the instrument for my study was that I tried it out in a pilot study to ensure that it was the best tool for the study.

Reliability of the CPERS

Reliability is concerned with the consistency with which a measuring tool works as well as the dependability of the measuring instrument. For the original CPERS, 46 centres in different climatic regions, in capital cities, small towns and country settings and of both larger and smaller sizes were included in the reliability testing sample. The CPERS was found to be highly reliable in terms of inter-rater reliability (exact agreement within one point in 84% of the cases).

The results were considerably higher than the international benchmarks, in comparison, for instance, to Harms, Clifford & Cryer's Infant/Toddler Environment Rating Scale (ITERS) of 78% and the revised Early Childhood Environment Rating Scale (ECERS-R) at 71% (Harms, Clifford & Cryer, 1998). The test-retest reliability results were also very high, with over 90% accuracy (exact agreement within one point in 91% of the cases, with Cronbach's G up to 0.97).

These results from extensive field tests in the United States, Australia and New Zealand, therefore, have revealed very acceptable levels of content and construct validity and inter-rater and test-retest reliability, thus providing strong empirical evidence for the overall validity and reliability of the Children's Physical Environments Rating Scale. Also the scales, subscales and

the items measured in the CPERS were all consistent with the requirements stipulated in Ghana's Children's Act 560 (Sub-Part II- Day-Care Centres), the Day Care Centres Regulations, 1979 (S.M.C.D) 144 (Department of Social Welfare, 2014).

Due to the fact that I modified the CPERS, I did a reliability test on the shortened scale to check for its internal consistency (see APPENDIX B). This was done during the first phase (quantitative) of the study when the data had been collected. Cronbach *alpha* was calculated for the items within each of the twelve (12) subscales. One hundred and sixty centres were involved in the study. Initial reliability analysis indicated lower internal consistency for subscale 1 which consisted of 3 items ($\alpha = .48$) and a very high internal consistency for subscale 8 which consisted of 8 items ($\alpha = .98$).

The SPSS statistics output for Cronbach *alpha* also produced a table for Item-Total Statistics which presented the "Cronbach Alpha if Item Deleted" in the final column and this column showed the value that the Cronbach *alpha* would be if a particular item was deleted from the scale. So with the help of the Item-Total Statistics, question 3 was deleted from subscale 1 and question 8 was deleted from subscale 8 which improved the cronbach *alpha*. Table 5 shows the internal consistency of each subscale.

Generally the Cronbach *alphas* were above the benchmark of 0.7 (Cohen, Manion & Morrison, 2007). With the exception of subscale 10, the value of Cronbach *alpha* (0.81-0.97) was greater than the original scale CPERS (Moore & Sugiyama, 2007). The subscale 10, "Play Yards: Functional Needs," which showed low internal consistency ($\alpha = 0.63$) could be as a result of the subscale covering wider range of issues concerning the requirement for outdoor play

areas such as ground surface, shade and storage, which may not be as highly associated with each other. In spite of this one short fall, taken together, the results indicate that the CPERS used for this study has a very high internal consistency making it very reliable.

| Subscale | Number of items | Cronbach's alpha |
|----------------|-----------------|------------------|
| Subscale I | 2 | 0.84 |
| Subscale 2 | 6 | 0.88 |
| Subscale 3 | 6 | 0.93 |
| Subscale 4 | 12 | 0.96 |
| Subscale 5 | 8 | 0.96 |
| Subscale 6 | 6 | 0.89 |
| Subscale 7 | 6 | 0.94 |
| Subscale 8 | 7 | 0.97 |
| Subscale 9 | 5 | 0.96 |
| Subscale 10 | 7 | 0.63 |
| Subscale 11 | 8 | 0.91 |
| Subscale 12 | MORIS | 0.81 |
| CPERS | 84 | 0.63 - 0.97 |
| Original CPERS | 124 | 0.53 - 0.96 |

Table 5: Internal Consistency of Items within each subscale and the CPERS

Questionnaires

Two sets of questionnaires were used for the study: the centre questionnaire and the health and safety practices questionnaire.

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Centre questionnaire (CQ)

The researcher developed the Centre Questionnaire (CQ) based on literature to seek information about the characteristics of ECCD centre on a range of areas including the number of children enrolled, the centre's staff complement, as well as the centre's health and safety policies and practices (see APPENDIX C). This questionnaire was completed by only the centre Director or Head teacher, the owner or operator, or the senior person in the role of director in the centre. The questionnaire was in two sections. Section A had five items seeking background information of the ECCD centre and section B also had five items about the health and safety practices of the centres. Respondents were required to indicate their level of agreement to statements by ticking ($\sqrt{}$) the appropriate response, either *Yes* or *No*.

Health and safety practices questionnaire (HSPQ)

The HSPQ sought information from ECCD teachers on personal demographics, child care experience as well as their health and safety practices at the centres. Nineteen items on the questionnaire were used to measure the respondents' health and safety practices at the ECCD centres (see APPENDIX D). Respondents were required to indicate their level of agreement to statements by ticking ($\sqrt{}$) the appropriate response, either *Yes* or *No*. The components of the practices measured included the general health practices, environmental health practices as well as injury prevention practices followed at the centre.

The questionnaire was guided by the California Childcare Health Program (2014)'s Health and Safety checklist for Early Care and Education Programs and the U.S. NACCRRA (2007)'s Guide for CCR&Rs to Assist Child Care

Programs Health Practices. Out of the 19 items that were used in assessing the health and safety practices of the teachers at ECCD centres, 10 were adopted from the revised health and safety checklist developed by the California Childcare Health Program (2014) and 9 were adopted from a guide for Child Care Resource & Referrals to assist child care programmes health practices (NACCRRA, 2007).

The California Childcare Health Program Health and Safety Checklist-Revised (CCHP H & S Checklist-R) was based on "Caring for Our Children: National Health and Safety Performance Standards, Third Edition". The checklist had subscales that measured emergency prevention or poisons, staff and children's possessions, special needs, hand washing, food preparation /eating/sanitation, oral health, outdoor/indoor equipment and infant/toddler (general, diapering, food preparation/eating and sleeping/napping).

NACCRRA's Standards for Health and Safety was develop by a national network of child care resource and referral agencies which had experts and partners who among others offered comprehensive training to child care professionals, undertook research and advocated for child care policies that positively impacted the lives of children and families. The standards provided recommended health practices to be followed at a child care centres to ensure health and safety. The items in the HSPQ were all consistent with Ghana's Department of Social Welfare (2014) Regulations for Day Care Centres and the guidelines and handbook for starting and operating an early childcare business in Ghana (Tiwaa, 2013).

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Validity and reliability of the questionnaires

Both the CCHPH&S Checklist-R and the NACCRRA's Standards for Health and Safety were developed with consultation from child care health advocates, child care health consultants and other health and safety experts to identify the standards to include. The CCHPH&S Checklist-R was pilot tested in four child care centres in Arizona, North Carolina and California and the checklist was found to be a reliable and valid instrument. My supervisors also read through the questionnaire and gave their comments and approval.

However, a reliability test was run to assess internal consistency of the HSPQ answered by 462 ECCD teachers (see APPENDIX E). The results indicated high internal consistency of the questionnaire which consisted of 19 items ($\alpha = 0.84$). However, 5 items in the questionnaire did not apply to teachers in the public schools and so a reliability test was run for the questionnaire answered by the 114 public school teachers. The results indicated a not too high internal consistency for the 14 items ($\alpha = 0.67$). Then a separate reliability test was run for the 348 private school teachers and the results indicated an internal consistency for the 19 item ($\alpha = 0.78$) which is around the benchmark of 0.7. Putting all together, the Cronbach's *alphas* show that the HSPQ was a reliable instrument.

Semi-structured interview guides

Two semi-structured interview guides were used: one for ECCD Heads and the other for the ECCD teachers.

Semi-structured interview schedule for heads of ECCD centres

The interviews were semi-structured which allowed for follow up questions to be asked during the discussion of issues concerning the health and

safety conditions of ECCD centres in the Cape Coast Metropolis . Ten questions were on the interview schedule (see APPENDIX F). The first five questions were about the demographic characteristics of the Heads: their age, gender, experience, qualification as well as the type of ECCD centre they were working in. The other five questions were about the physical environment (outdoor spaces), health and safety practice, believe on centre characteristics and teacher characteristics.

ECCD centre Heads were specifically asked if they believed it was important to provide outdoors spaces for children to play and the challenges they faced in getting the children enough equipment to play with. They were also asked how easy it was for the centre to require and keep doctor's report for children who were absent due to illness. The Heads were also asked if they believed that being a public or private ECCD centre affects the quality of the physical environment as well as the health and safety practices. Then they were finally asked if they believed that a teacher's qualification will determine how good they would take care of the children.

Semi-structured interview schedule for teachers of ECCD centres

The semi-structured interview schedule for the ECCD teachers had eight questions (see APPENDIX G). The first five questions were about the demographic characteristics of the teachers: their age, gender, experience, qualification as well as the type of ECCD centre they were working in. The other three questions were about the health and safety practice, centre characteristics as well as teacher characteristics. ECCD teachers were specifically asked how easy it was for them and the children to use alcohol based hand sanitizer as alternative when their hands were not visibly soiled.

They were also asked if they believed that being a public or private ECCD centre affects the quality of the physical environment as well as the health and safety practices. Then they were finally asked if they believed that a teacher's qualification will determine how good they would take care of the children.

Trustworthiness of the qualitative phase

Throughout the data collection and analysis process of the qualitative phase of this study, I had to ensure that the findings and interpretations were accurate or credible. Creswell (2012) indicated that validating findings in qualitative research means that the researcher determines the accuracy or credibility of the findings by employing certain strategies. In this study, I used five rigorous and credible strategies to ensure trustworthiness. The first strategy was member checking.

Creswell explained member checking as "a process in which the researcher asks one or more participants in the study to check the accuracy of the account" (p.259). I kept an on-going dialogue with the participants regarding the interpretation of the respondents' reality and meanings with the aim of ensuring the true value of the data collected. This I did by sending the findings back to the participants and asking them about the accuracy of the report in terms of how realistic the descriptions were, whether the themes arrived at were accurate and also if the interpretations represented fairly what the situation was.

The second strategy used was reflexivity. This is when researchers reflect on their own biases, values, and assumptions and actively write them into their research (Creswell, 2012). I articulated my bias at the outset of this study under the sub-heading "The Researcher's Role". I talked about how the

interpretation of the findings may have been shaped by my background as a mother who has a child in an ECCD centre in the Cape Coast Metropolis. This made me become self-conscious and so I continued to test my bias about the phenomenon by comparing and contrasting these presumptions with the results in the text. This helped in addressing any prejudices developed from the literature and personal experience.

The third strategy I used to ensure trustworthiness was to also present the negative or discrepant information that contradicted the general perspective of the themes found in the data. Creswell (2009) asserted that "because real life is composed of different perspectives that do not always coalesce, discussing contrary information adds to the credibility of an account" (p.192). And so to ensure that the accounts became more realistic and valid, during the presentation and discussion of the general themes founds in the data, I presented also contrary perspective from the data.

The fourth strategy used by the researcher to ensure trustworthiness was the provision of rich, thick and detailed descriptions to convey the findings so that anyone interested in transferability would have a solid framework for comparison (Miller, 1992 as cited in Creswell, 2007). Creswell also asserted that when qualitative researchers provide detailed descriptions of the settings or provide many perspectives about a theme, the results become more realistic and rich.

The fifth strategy was the use of an external auditor to review the entire research. I gave the qualitative phase of the study to an independent investigator who looked at various aspects of the study such as accuracy of the transcription, relationship between the research questions and the data, the

level of data analysis as well as the interpretation. The external auditor gave his objective assessment of the research process and this helped to enhance the overall trustworthiness of the qualitative phase of this study.

Pilot study

A pilot study was conducted for the quantitative phase before the main study in the Komenda - Edina - Eguafo - Abrem (KEEA) Municipality. Ten ECCD centres were assessed using the CPERS to measure the quality of their physical environment. The HSPQ was given to 40 ECCD teachers in the KEEA Municipality to complete. A basic descriptive statistical analysis was done using SPSS version 21. Out of the 10 ECCD centres assessed, only one centre representing 10% of the centres had an excellent rating on the quality of the physical environment. Seven (7) of the centres representing 70% rated fair and two centres representing 20% had poor physical environment. The overall quality rating of physical environment of the ECCD centres in KEEA was fair.

For the health and safety practices, the results showed that most of the ECCD centres and teachers met the recommended health and safety practices. However, seven of the centres representing 70% did not meet the standard practice of keeping doctor's notes or permissions for children who were out due to illness. And 26 of the teachers representing 65% did not meet the standard practice of using alcohol-based hand sanitizers as alternative to hand washing with soap and water, if the hands are not visibly soiled. I did not encounter any difficulty in conducting the analysis.

The pilot study helped to confirm the viability of the data collection instrument, the data collection process as well as the analysis. The pilot study helped me to identify possible problems that could arise in the main study.

Some changes were therefore made on the instruments before the main study. These changes included the deletion of some of the sub-scales and items on the observational instrument as well as the addition of my contact number on the questionnaires. I initially intended to give every teacher in a class (creche, nursery and K.G) a questionnaire to answer but through the pilot study I realised that if there were two or more teachers in a particular class, there could be a possibility of them giving the same response.

Hence in the main study, the questionnaire was given to one teacher in a class. In situations where there were two or more teachers in that class, the questionnaire was answered by the lead teacher. I also intended collecting data under centre characteristics to include: the centre being used as a student-teacher practicum site; the centre receives capitation grant; the auspice of the centre (public or private) and level of centre fees. But it was realized during the pilot study that only a small number of ECCD centres get student-teachers using their centre as practicum site which was also not on regular basis.

Only public (government) centres were to officially receive capitation grant but even with this, the researcher recorded in the field notes that this capitation grants were not coming to the schools on time and even some schools were owed arrears from pervious terms. This meant that even with the public schools there were unequal numbers in terms of schools receiving capitation grant. This made it impossible to use capitation grant as a centre variable in the analysis.

Besides, the EMIS (2015) records indicated that when it comes to early childhood education in the Cape Coast Metropolis, it was largely run by private centres (101 private and 59 public ECCD centres) which meant that

collecting data on centre receiving capitation grant was not going to help in the analysis. I also realized that the public centres were not collecting fees and even among the private centres the level of fees varied greatly and so the only centre characteristic that could be used in this study for establishing any kind of relationship was the auspice of the centre (public or private). No changes were made to the HSPQ.

For the follow-up interviews, I tried out the schedule on five ECCD teachers in the KEEA Municipality and they confirmed that the questions were clear and understandable. The question for the Heads concerning the physical environment (outdoor spaces) was stated as "Do you believe it is important to provide outdoors spaces for children to play?" The question appeared to require only a "Yes" or "No" answer but because the interview was semi-structured, it allowed me to probe further with a follow up question requiring the Heads to explain why they gave a specific response. No specific changes were made to the interview schedule probably because I selected the semi-structured questions from the already validated questionnaires.

Data Collection Procedure

The data collection process started with approval from both the supervisor and ethical clearance board of the University of Cape Coast (See Appendix H). An introductory letter was taken from the Department of Health, Physical Education and Recreation (See Appendix I) to enable the researcher to obtain permission from the Cape Coast Metropolitan Education Office and the Social Welfare Department to conduct the study. I obtained permission letters from the Education office (See Appendix J) and the Social Welfare Department (See Appendix K) which I sent together with the introductory letter from the

Department of Health, Physical Education and Recreation to all the registered ECCD centres in the Cape Coast Metropolis.

With the quantitative phase, I booked appointment with the centres and made it clear that with the assessment of the quality of the physical environment, the study was not looking at curriculum, staffing or the children but only the architecture and the built environment of the centre and so there was no need for parental consent. Two research assistants helped me in the physical measurements of the classrooms (length and breadth), the play ground and the centre building after they were trained on how to read and use a measuring tape but the actual assessment of the physical environment of all the centres was done by me.

Using the CPERS, I assessed the building of ECCD centres by deciding on how well the centre satisfied each item on the subscales in a 5-point linearnumeric scale ranging from *Not Met* (score of 0) to *Fully Met* (score of 4). The completion time for the assessment of the physical environment of a centre was about 40 minutes. For the questionnaires, consent was sought from the ECCD teachers involved as well as the ECC Heads or Coordinators. The centre Heads and teachers were given the Centre Questionnaire and the Health and Safety Practices Questionnaire respectively which were collected after two days. It took the researcher two months (July and August, 2016) to collect data from the centres and the teachers regarding the quality of the centres' physical environment and the health and safety practices.

Regarding the qualitative phase, I contacted the ECCD Heads and the teachers to seek their permission to interview them. A date was booked and I conducted a face-to-face interview session at the various ECCD centres of the

Heads and teachers after they were briefed on what the interview was about. On the average an interview took one hour and all the interviews were conducted within two weeks (November, 2017). All the respondents in this study were volunteers who were given equal opportunities to take part in the research.

Ethical considerations

To ensure that the rights of the participants were protected, I did the following:

- the purpose of the research was articulated verbally and in writing to the participants and how the data was going to be used was also described to them.
- participants signed the volunteering form to give the me the permission to proceed with the study.
- 3. participants were informed of the data collection activities and the device to be used in collecting the data.
- 4. verbatim transcriptions and written interpretations and reports were made available to the participants.
- 5. the participants' rights, interest and wishes were considered first when choices were made regarding reporting the data and participants' anonymity was also assured.

Data Processing and Analysis

For the quantitative phase, the CPERS and the questionnaires collected were collated, coded, entered into a computer and subjected to analyses using IBM SPSS Statistics software version 20. Data was screened for missing values and outliers. This was done by generating frequencies for each variable

to identify obvious errors in the data that were not possible and reasonable entries. Data which was wrongfully entered was corrected by referring to the original questionnaire or the CPERS and so the data was cleaned before analyses were run. All the demographic, CPERS and health and safety practices data were categorical. Demographic and background information about the sample, were presented in percentages.

For the qualitative phase of this study, I transcribed the recorded interviews verbatim. Appendices L and M, show the interview transcripts of all the respondents. I used both manual and computer-assisted qualitative data analysis software (CAQDAS) called NVivo 11 Plus to do the coding and analysis. I first carried out the coding and analysis of the textual data manually. I read each transcript, made preliminary notes and analysis that informed my direction of making sense of the data. The manual coding and analysis helped me to get a feel of the qualitative data analysis process. I then decided to use the NVivo 11 Plus as my data management tool.

As a management tool, the software was more efficient in organizing the data because it was easier and quicker for me to code text on screen than would be to manually cut and paste different pieces of text relevant to a single code onto pieces of paper and store them in a file. The software was also relatively user-friendly and simple to use. This study valued both the manual and CAQDAS usage in analyzing and managing the qualitative data because it added rigour to the analysis process and credibility of the results. And so I transferred the transcripts first to Excel document and after the data was cleaned and saved, I imported them into the NVivo software.

Before doing the actual analysis, I explored the data to know what respondents were saying about the question and the kinds of words they used during the interview. I did this by using "Word Cloud" in NVivo 11 which gives a visual representation of the frequency of the words used, the bigger the word the higher the number of times the word was used (Adu, 2016). This process helped me to have an idea of what to look for during the coding. I followed up with detailed coding. Coding which means assigning labels to text (Adu, 2016), was done by highlighting the information or text and dropping them into the nodes or containers created in NVivo.

Based on my reading and re-reading of the transcripts, the coding method I used during the "First cycle coding" was "Themeing Data" which involved using phrases or sentences to describe or capture the meaning of an aspect of a data (Saldana, 2013). I therefore identified themes first and created nodes or containers for them in NVivo. I then went through each respondents' response to the interview question, starting from the first sentence, statements or phrases were highlighted, dragged and dropped into a specific theme or node based on the content of the information highlighted.

Therefore the coding I did was "In vivo" which involves coding by using participants' own words (Saldana, 2013). The last stage of the coding was the "After First cycle coding" where I categorized the codes under the themes based on the code frequencies. NVivo generates the frequency or number of times a code has been put under a specific theme or node. I performed the following set of analyses to test statistical hypotheses and to answer the research questions.

To answer Research Question 1, a set of descriptive analyses was performed. After the completion of the entire scale (the CPERS) for a centre, I first calculated the mean scores for every subscale by summing up all the ratings given to all the items under the subscale divided by the number of items in that particular subscale. To get the overall quality of the physical environment, the total score of the CPERS was calculated by finding the mean score for all of the 12 subscales and the final scores were grouped as follows: 0.0-1.00 = poor, 1.01-2.00 = fair, 2.01-3.00 = good and 3.01-4.00 = excellent (See Appendix N). Findings were presented using frequency counts, percentages and bar charts.

After the quantitative findings, I followed-up on a subscale of the CPERS which measured "Play Yards: Functional Needs" and "Developmental Needs. Two interview questions were asked from ECCD centre Heads. The first question asked was if they believed it was important to provide outdoors spaces for children to play and why. I first explored the data to know what respondents were saying about the question and the kinds of words they used during the interview. Figure 11 shows the word cloud of respondents' words used in response to the interview question.

I identified themes running through the transcripts and isolated the thematic statements by searching through all the texts, highlighting, and extracting the meaning units. To illustrate how the thematic statements were isolated, I have deliberately selected four excerpts based on their typicality to the phenomenon under study.



Figure 11: Words used by respondents in response to question on importance of play yard to children.

Source: Word Cloud generated by the researcher using NVivo 11 Plus

The following excerpts and highlighted statements from four respondents

are examples of how I analyzed the data from the eight ECCD Heads.

Excerpts from four transcripts: the following excerpts were extracted from

HR 11 and 15 who were Heads of private ECCD centres and HR 12 and 14

who were coordinators of ECCD classes in public Basic Schools. I highlighted

the meaning units, as indicated in the paragraphs that follow.

We know that, with pre-school, children learn through playing so while they are playing, they are learning. it is very necessary. HR 11

Yes... these children, their IQ is not higher than the primary people so when you teach them a little, there should be a little out game program so that their mind will rest for a while. You can't teach them morning to

afternoon. There should be playing grounds so that when they learn, their mind will get settled [when they play]. HR 12

Yea as the saying goes all work and no play makes Jack a dull boy, so if you don't provide space, outdoor space for children to play, it means you are making them work, work, work and if they work throughout, their minds become tired and when the mind is tired, anything that they work, anything that they do will not, they wouldn't get the concept so you provide spaces for them and you know children also play as they, they learn as they play so they, the two helps in teaching and learning. HR 14

Very well. It is very very important. Important in such a way that in most instances they have to come out and enjoy a bit of sunshine, moving about so providing outdoor space for them to maneuver and play, stretching their legs is very very important, that is if you have. HR 15

These thematic statements were then put into the nodes or containers I had created for each theme in the NVivo software. Appendix O, shows the NVivo summary output of the coding for each identified theme. At the end of the analysis the total number of codes assigned to the three themes identified was 12. The second question ECCD Heads were asked was about challenges they faced in getting the children enough equipment to play with. I explored the data to know what respondents were saying about the question and the kinds of words they used during the interview. Figure 12 shows the word cloud of respondents' words used in response to the interview question.

I identified two themes and isolated the thematic statements. Appendix O shows the NVivo summary output of the coding for each identified theme. At the end of the analysis the total number of codes assigned to the two themes identified was also 12. For Research Question 2, I first performed descriptive analyses by calculating the frequencies and percentages of the CQ and HSPQ (See Appendix P). The scores that were generated were nominal and I used them as categorical data. Findings were presented using percentages and bar

chart. For the follow-up interviews, both the ECCD Heads and teachers were asked one question each. The question to the Heads inquired how easy it was for the centres to require and keep copies of doctor's notes or permissions for children who were out due to illness. After exploring the data, words that were used in response to the interview question is shown in Figure 13.



Figure 12: Words used by respondents in response to question on challenges with getting enough equipment for children to play.Source: Word Cloud generated by the researcher using NVivo 11 Plus



Figure 13: Words used by respondents in response to question on ECCD centres requiring doctor's report on sick children.Source: Word Cloud generated by the researcher using NVivo 11 Plus

I identified a single theme and isolated the thematic statements by searching through all the texts, highlighting, and extracting the meaning units. Appendix Q shows the NVivo summary output of the coding for the identified theme. At the end of the analysis the total number of codes assigned to the theme identified was seven. The ECCD teachers were asked how easy it was for them and the children to use alcohol-based hand sanitizers as alternative to hand washing with soap and water, if the hands are not visibly soiled. Figure 14 shows the word cloud of respondents' words used in response to the interview question.



Figure 14: Words used by respondents in response to question on hand sanitizer usage.

Source: Word Cloud generated by the researcher using NVivo 11 Plus

After reading through the transcripts I identified four themes. I then isolated the thematic statements by searching through all the texts, highlighting, and extracting the meaning units. Appendix Q shows the NVivo summary output of the coding for the identified theme. At the end of the analysis the total number of codes assigned to the four themes identified was 26. Research Hypothesis 1 was in two folds, so I conducted the analyses in two parts. The first part of the analysis was to determine the extent to which centre characteristic was associated with the quality of the physical environment of ECCD centres.

The null hypothesis was that there is no relationship between centre characteristic and quality of physical environment of ECCD centres in the Cape Coast Metropolis. During the data cleaning, I used SPSS to run a cross-tabulation for the dependent (quality of the physical environment) and independent (centre auspices) variables to check the distribution of cases in all the cells and I found that when it comes to the category of "poor" environment, one cell had 0 cases. None of the public ECCD centres had a "poor" rating. All the seven centres that rated "poor" were from private ECCD. So the category of "poor" environment could not be added for the analysis leaving three categories under the quality of physical environment variable.

My original intention was to use multinomial logistic regression to generate statistics in response to the first part of Research Hypothesis 1 because multinomial logistic regression is a classification method that generalizes logistic regression to multiclass problems, that is, with more than two possible discrete outcomes (Greene, 2012) and it is used to predict a nominal dependent variable given one or more independent variables which could be either dichotomous or continuous in scale. However the data could not meet one of the six assumptions that were required for multinomial logistic regression to give a valid result.

The assumption which was not met was the sample size guidelines for multinomial logistic regression which indicated a minimum of 10 cases per independent variable (Schwab, 2002) but one group of the independent variable (public ECCD centres) had only 7 cases in the "excellent" category of the quality of physical environment. The appropriate statistic I used was the

Pearson's Chi-square Test. Chi-square test was the most appropriate statistic for testing hypotheses when the variables are nominal and consist of two or more categorical and independent groups.

It is used to find if there is a association between two categorical variables and the advantage of using the Pearson's chi-square is that as it evaluates two variables, a significant chi-square not only give information that the pattern of frequencies is significantly different from a random pattern but also establishes the fact that the two variables are associated with one another (Laerd Statistics, 2013). Chi-square was also appropriate for the analysis because the data from the study met all the six assumptions that were required for Chi-square to give a valid result. Firstly, the data in the cells were in frequencies rather than percentages.

Secondly, the categories or levels of the variables were mutually exclusive. Thirdly, each subject contributed data to only one cell, meaning each subject was tested once and not over time. Fourthly, the groups studied (in this case the public and private ECCD centres) were independent. Fifthly, both the independent variable (centre characteristic) and dependent variable (quality of physical environment) were measured as categories and on nominal levels. The independent variable was in two categories (public and private) and the dependent variable was in three categories (fair, good and excellent).

Finally, the data of the study met the assumption that the value of each number of cells should be five or more in at least 80% of the cells (McHugh, 2013) and in this case, the least number of cases in a cell was seven which allowed for chi-square to be used. I therefore requested a chi-square analysis using SPSS (See Appendix R). Under the chi-square test output I was

presented with the chi-square value, the degree of freedom and the exact level of significance. And so from these tables I presented the results and conclusion on whether there was a significant relationship or not between the centre auspices and quality of physical environment.

With regards to the second part of Research Hypothesis 1, I also used Pearson's chi-square test to determine to what extent centre characteristic was associated with the centre's health and safety practices (See Appendix R). The null hypothesis was that there is no relationship between centre characteristic and health and safety practices of ECCD centres in Cape Coast metropolis. For the follow-up interviews, I asked the opinion of both the ECCD Heads and teachers as to whether a particular centre type was associated with better quality of physical environment and better health and safety practices. After exploring the data, words that were used in response to the interview question is shown in Figure 15.

I identified four themes. I then isolated the thematic statements by searching through all the texts, highlighting, and extracting the meaning units. Appendix S shows the NVivo summary output of the coding for the identified **NOBIS** theme. At the end of the analysis the total number of codes assigned to the four themes identified was 36. Pearson's chi-square test was once again used to generate statistics in response to Research Hypothesis 2 which also aimed at determining the extent teacher characteristics was associated with their Health and Safety Practices (See Appendix T). The null hypothesis was that there is no relationship between teacher characteristics and health and safety practices in Cape Coast metropolis.

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Figure 15: Words used by respondents in response to question on centre type

Source: Word Cloud generated by the researcher using NVivo 11 Plus

For the follow-up interviews, I asked both the ECCD Heads and teachers if they believed that a teacher's qualifications will determine how good they will take care of the children. After exploring the data, words that were used in response to the interview question is shown in Figure 16. I identified three themes. I then isolated the thematic statements by searching through all the texts, highlighting, and extracting the meaning units. Appendix U shows the NVivo summary output of the coding for the identified theme. At the end of the analysis the total number of codes assigned to the four themes identified was 30.



Figure 16: Words used by respondents in response to question on teacher Qualification.

Source: Word Cloud generated by the researcher using NVivo 11 Plus

Chapter Summary

This chapter described the research design and methodology that I used in **NOBIS** the study. An explanatory sequential mixed methods design was used to achieve the purpose of the study. The study covered all ECCD centres as well as all ECCD teachers in the Cape Coast Metropolis of Ghana. Follow-up interviews were conducted with selected ECCD centre Heads and teachers. Instruments used in the study included questionnaires, observational rating scale and semi-structured interview schedules. Data collected was processed by the use of SPSS version 21 and NVivo version 11 Plus. Data was analysed

using descriptive and inferential statistics. Themes were also identified from the interviews.


CHAPTER FOUR

RESULTS AND DISCUSSION

The purpose of this explanatory sequential mixed methods study was to assess the health and safety conditions of Early Childhood Care and Development (ECCD) centres in the Cape Coast Metropolis of Ghana and to identify the determinants of these health and safety conditions. One hundred and sixty ECCD Centres in the Cape Coast Metropolis were used in the study and questionnaire was administered to 462 ECCD teachers in the Metropolis. The questionnaire was completed by the respondents and all were returned to the researcher.

Eight ECCD Heads and eight ECCD teachers were involved in the follow-up interviews. This chapter presents the results and discussion of the findings. The chapter has been organised into four sections to address the four main research questions of the study.

Research Question 1: What is the quality of the physical environment of NOBIS ECCD Centres in Cape Coast Metropolis?

Research question one aimed at assessing the quality of the physical environments of ECCD centres. Tables 6 to 8 show the results. Table 6 presents the results for the overall quality of the physical environment in the ECCD centres. The results from Table 6 indicate that more than half of the ECCD centres, that is 56% (n = 89) rated fair on the quality of their physical environment with only 14% (n = 23) of the ECCD centres having an excellent rating on the quality of their physical environment.

| Quality | Mean Score | Frequency | Percentage |
|-----------|------------|-----------|------------|
| Poor | 0.00-1.00 | 7 | 4.4 |
| Fair | 1.01-2.00 | 89 | 55.6 |
| Good | 2.01-3.00 | 41 | 25.6 |
| Excellent | 3.01-4.00 | 23 | 14.4 |
| Total | | 160 | 100 |

Table 6: Quality of the Physical Environment in ECCD Centres in Cape Coast Metropolis

The physical environment assessed in this study was made up of four major parts and Table 7 presents the results on how these ECCD centres scored on the various parts to arrive at the final physical environment ratings in Table 6.

Table 7: Physical Environment Quality Distribution among ECCDCentres in Cape Coast Metropolis

| | D (0/) | D: (0() | 0 1 (0/) | |
|----------------------|-----------|-----------|-----------|---------------|
| Physical Environment | Poor (%) | Fair (%) | Good (%) | Excellent (%) |
| 4 | | | | |
| Planning | 68 (42.5) | 89 (55.6) | 3(1.9) | 0 (0) |
| U U | | | J | |
| Duilding of a Whole | 0 (0) | 90 (55 6) | 45 (28.1) | 26(162) |
| Building as a whole | 0(0) | 89 (33.0) | 45 (28.1) | 20 (10.5) |
| | | OBIS | | |
| Indoor Space | 25 (15.6) | 71 (44.4) | 39 (24.4) | 25 (15.6) |
| | | | | |
| Outdoor Space | 15 (9.4) | 89 (55.6) | 51 (31.9) | 5 (3.1) |
| 1 | | . , | | |
| | | | | |

The results of the score on the four (4) parts of the physical environment indicated that majority of ECCD centres, that is 56% (n=89) scored fairly on three (3) parts of the environment. These parts are the 'Planning of the Centre', 'Building as a Whole' and 'Outdoor Space'. It can be deduced from this results that these three (3) areas in the physical environment where most 130

centres did not score well contributed to majority of the centres scoring fair in the final rating of the physical environment showed in Table 6. To further explore on the overall performance of the centres on the rating of the physical environment, Table 8 presents the results of the overall performance of the centres, showing the total mean for the twelve subscale scores as well as the overall mean of the CPERS Total score. Figure 17 illustrates the profile of these centres on twelve subscales of the CPERS and CPERS Total Score.



Figure 17: Profile on twelve CPERS Subscales and CPERS Total Score for ECCD centres in the Cape Coast Metropolis.

Note: (1) Center Size & Modules; (2) Image & Scale; (3) Circulation; (4) Common Core of Shared Facilities; (5) Indoor Environmental Quality; (6) Safety & Security (7) Modified Open-Plan Space; (8) Home Base; (9) Physical Activity Area; (10) Play Yard: Functional Needs; (11) Play Yard: Developmental Needs; (12) Location & Site; (13) CPERS Total Score.

Consistent with the results shown in Table 7 is the evidence from Table 8 that subscales with mean score ranging from 1.01 - 2.00 indicating a fair rating, hovered around 'Planning of the Centre' [Centre Size and Modules (M = 1.59), 'Building as a Whole'[Common Core of Shared Facilities (M = 2.02)] and 'Outdoor Space'[Play Yard: Functional Needs (M = 1.90) and Play Yard:

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Developmental Needs (M = 1.84)]. The over all CPERS-Total Score also indicated a fair rating (M= 1.87).

| Sub-Parts of the Physical Environment | М | SD |
|---------------------------------------|------|------|
| Planning | | |
| (1) Center Size and Modules | 1.59 | .53 |
| Building As a Whole | | |
| (2) Image and Scale | 2.53 | .93 |
| (3) Circulation | 2.49 | .77 |
| (4) Common Core of Shared Facilities | 2.02 | 1.14 |
| (5) Indoor Environmental Quality | 2.28 | 1.12 |
| (6) Safety and Security | 2.60 | .76 |
| Indoor ActivitySpaces | | |
| (7) Modified Open-Plan Space | 2.53 | .96 |
| (8) Home Bases | 2.06 | 1.14 |
| (9) Physical Activity Areas | 2.08 | .91 |
| Outdoor Spaces | | |
| (10) Play Yards: Functional Needs | 1.90 | .65 |
| (11) Play Yards: Developmental Needs | 1.84 | .84 |
| (12) Location and Site | 2.95 | .58 |
| CPERS | | |
| (13) CPERS -Total Score | 1.87 | .77 |

Table 8: Total Means and Standard Deviations of CPERS Scores

Note: N = 160.

Interview with ECCD centre Heads: Play Yard

This section presents the findings of the two interview questions asked with the aim of finding reasons why ECCD centres did not perform well on the physical environment aspect that looked at "Play Yard" meeting both functional and developmental needs of the children at the centre.

Do you believe it is important to provide outdoors spaces for children to play?

During the follow-up interview ECCD centre Heads or Coordinators were asked if they believed that having a play yard or play ground for children to play was even important in the first place. All the ECCD Heads responded positively that having a space for children to play was very important and in explaining why they responded positively to the question, three themes came up: "Learning Outdoors", "Upkeep" and "All Work and no Play".

Learning outdoors

The ECCD Heads indicated that it was important to provide play yards for children to play because in their view, children also learn when they are playing outdoors. This theme was evident in the following quotes from the NOBIS Heads:

We know that, with pre-school, children learn through playing so while they are playing, they are learning, it is very necessary. (HR 4)

Another Head in a public ECCD centre indicated that playing outside was even part of the K.G. programme they were running in their school and so it was part of their time table. This she indicated by saying:

It is very very important because for the KG, for the program we are doing the FTT saber, their program we have the in-door activities we have

table top activities, they go to centers. We have outside activity, so they go and have some of the activities outside so we have to provide some things outside for them to use....aside their playing outside, they also learn outside so when they have something in the outside it will help. (HR 16)

Upkeep

The ECCD Heads also indicated that it was important to provide play yards for children to play because in their view, playing outdoors contributes to the general well being and upkeep of children. This theme was evident in the following quotes from the Heads:

It is very very important. Important in such a way that in most instances they have to come out and enjoy a bit of sunshine, moving about so providing outdoor space for them to maneuver and play, stretching their legs is very very important, that is if you have. (HR 15)

Another Head indicated that playing outside in certain play equipment is very helpful for the children in terms of their physical development. This she indicated by saying:

We have a lot of toys, equipment on our play ground, some are like NOBIS tunnels. People don't know the use of that tunnel but it's actually a good thing for a child who is not able to crawl. Something like a slide for children to actually slide on, it helps them with their physical ability. (HR

13)

All work and no play

There were indications also from the ECCD Heads that children need to play because they cannot be learning in the class all the time and this theme was evident in the following quotes from the Heads:

Yea...... as the saying goes "all work and no play makes Jack a dull boy", so if you don't provide space, outdoor space for children to play, it means you are making them work, work, work and if they work throughout, their minds become tired and when the mind is tired, anything that they work, anything that they do will not, they wouldn't get the concept. (HR14) When you teach them a little, there should be a little out game program so that their mind will rest for a while. You can't teach them morning to afternoon. (HR 12)

What are the challenges in getting the children enough equipment to play with?

The ECCD centre Heads or Coordinators were then asked about the challenges they faced in getting enough equipment for the children to play with. Two themes came up in their response to the question and they were: "Funds" and "Government".

Funds

The ECCD Heads indicated that the challenge with getting enough equipment for children to play with had to do with funds (money). This theme NOBIS was evident in the following quotes from the Heads:

It is the funds, the funds because when, we do tell the head about they getting equipment for playing but they also tell us no money, the capitation cannot capture so, in fact, it is problem. (HR14)

If you look around, majority of them [equipment], they've spoiled them but what can I do? Replacing it is quite a challenge because it is expensive. (HR13)

Another Head insinuated that probably if they had sponsors then getting enough equipment for the children to play with would not have been a problem. This he indicated by saying:

With this school, we don't have sponsors. We sponsor ourselves so we buy our teaching materials from the school fees that they pay, some don't pay at all and some pay it in bit. Some will pay half and they won't the rest so getting enough money to provide this thing is very difficult. (HR11)

Government

Some ECCD Heads also indicated that it was government's responsibility to provide playing equipment for the children. This they indicated by saying that:

The equipment I don't but it seems government should supply all these things. Once it is a government school, I think they should be able to provide all these things. (HR 12)

The office doesn't provide those things. If we want them we have to spend some money to try and build up some things for them to use. (HR16)

Apart from these two themes that came up, another Head had a different perspective to the issue about getting the children enough equipment to play with. He thought it was not very necessary to provide the children with enough playing equipment since they can share a few. This was evident in the following quote:

No, it isn't all the time that you have to provide them with these things. There are some equipment that they have to share and play with, and in a

way. you can't be providing each kid with equipment. Let them know how they can share together. (HR15)

Table 9 presents the summary of the findings of the interview on importance of play yard for children to play. Table 10 presents the summary of the findings of the interview on the challenges ECCD centres face in ensuring that children get enough equipment to play with.

| Theme | Meaning | Number of codes | Evidence from the Data |
|-------------------------|---|-----------------|---|
| | | Assigned | 1/2 |
| Learning Outdoors | Respondents gave an indication that children also learn when they are playing outdoors | 8 | "We know that, with pre- school, children learn through playing so while they are playing, they are learning, it is very necessary". |
| Upkeep | Playing outdoors contributes to the general well being and upkeep of children | 7 | "It is very very important. Important in such a way that in most instances they have to come out and enjoy a bit of sunshine, moving about so providing outdoor space for them to maneuver and play, stretching their legs is very very important, that is if you have". |
| All Play and no Work | Children need to play because they cannot be learning in the class all the time | 6 | "Yeaas the saying goes all work and no play makes Jack a dull boy, so if you don't provide space, outdoor space for children to play, it means you are making them work, work, work and if they work throughout, their minds become tired and when the mind is tired, anything that they work, anything that they do will not, they wouldn't get the concept" |

| Table 9: Themes | identified | from in | terview or | n importance | of Play | Yard |
|------------------------|------------|---------|------------|--------------|---------|------|
| A HOLE / A HOLLOU | 10011000 | | | | | |

| Theme | Meaning | Number | Evidence from the Data |
|------------|-----------------------------------|----------|-----------------------------|
| | | of codes | |
| | _ | Assigned | |
| Funds | Challenge with | 8 | "It is the funds, the funds |
| | getting enough | | because when, we do tell |
| | equipment for | | the head about they getting |
| | children to play with | | equipment for playing but |
| | has to do with funds | | they also tell us no money, |
| | (money) | | the capitation cannot |
| | | | capture so, in fact, it is |
| | | | problem". |
| | | | |
| Government | The expectation is | 4 | -"the equipment I don't |
| | that government | | but it seems government |
| | should provide | | should supply all these |
| | playin <mark>g equipment 🚽</mark> | | things. Once it is a |
| | for children | | government school, I think |
| | | | they should be able to |
| | | | provide all these things". |

Table 10: Themes identified from interview on Challenges with getting enough Play Equipment

In answering the question as to why ECCD centres in the Cape Coast Metropolis did not perform well on the physical environment aspect that looked at Play Yard meeting both functional and developmental needs, it was found that even though ECCD centre Heads acknowledged the importance of providing children play yard to play, their challenge with getting the children enough play equipment had to do with issues of funds. Public ECCD centres were also expecting the government to provide the equipment.

Research Question 2: What are the health and safety practices in ECCD Centres in Cape Coast Metropolis?

Research question 2 sought to identify the health and safety practices of ECCD centres in the Cape Coast Metropolis and determine whether they met recommended standards. Centre practices on five key areas are reported in 138

recommended standards. Centre practices on five key areas are reported in Figure18 while teacher practices on 12 key areas are in Figure 19. The results of the health and safety practices of the ECCD centres in the Metropolis showed a high number of centres meeting the recommended standard of practice.



N =160 ECCD Centres

Figure 18: Percentage of health and safety practices among ECCD Centres in Cape Coast Metropolis.

From Figure 18, the results indicated that out of the five (5) standards, a range of 74% to 86% of the ECCD centres met four (4) of the recommended health and safety standards. The results showed that when it comes to the recommended standard that centres should require and keep copies of doctor's notes or permissions for children who are out due to illness, more than half of the ECCD centres in the Metropolis failed to meet the standard. Out of the 160 ECCD centres, 38% (n = 61) could meet the standard with 62% (n = 99) of the centres not meeting the standard.

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Figure 19: Percentage of health and safety practices among teachers in ECCD Centres in Cape Coast Metropolis.

The results in figure 19 showed that most of the recommended health and safety practices were met. The percentage of teachers that met these recommended health and safety practices ranged from 50% to 95%. The only practice that had half of the teachers not meeting the standard was the usage of hand sanitizer as an alternative to hand washing when the hands were not visibly soiled.

Interview with ECCD centre Heads and Teachers: Health and Safety Practices

This section presents the findings of the two follow-up interview questions asked with the aim of finding reasons why ECCD centre Heads and teachers did not do so well in meeting the health and safety standards that looked at centres requiring doctor's report from children who were absent from school due to illness and the use of hand sanitizers in the centres. How easy is it for the centre to require and keep copies of doctor's notes or permissions for children who were out due to illness?

When ECCD centre Heads or Coordinators were asked if they required that children bring doctor's report after being absent from school due to illness, all the Heads responded negatively that they do not insist on it. One major theme that came up in their response was "We don't bother to Ask".

We don't bother to ask

All the ECCD Heads indicated that the centres do not ask of any doctor's report from children who get ill and absent themselves from school. This theme is evident in the following quotes from the Heads:

No, they don't bring any report and we don't even bother to ask because you have sent your child to the hospital, what do we have to ask. What we are expecting is that if the child is well, you bring him back to school. (HR12).

Oh... we don't ask for that so they don't (HR14).

Another Head however indicated that sometimes parents do bring some doctor's reports if their child had been absent from school for a long time but **NOBIS** it does not happen much. This she indicated by saying:

It is only in rare cases if the child has been away for a very long time. They do bring in report to show that the child was at the hospital but it is for the school, we only put it on their file just it to show that child was away for some period of time, just because of marking of the register. (HR12). How easy is it for you and the children to use alcohol-based hand sanitizers as alternative to hand washing with soap and water, if the hands are not visibly soiled?

When the ECCD teachers were asked about how easy it was for them and the children to meet the health and safety standard of using alcohol based hand sanitizers as alternative to hand washing when the hands were not visibly soiled, four themes came up in their response. The themes were: "Water and Soap", "Expensive", "Teachers Have" and "Some Children Have".

Water and soap

The ECCD teachers indicated that they have been using water and soap to wash their hands instead of hand sanitizer. This theme was evident in the following quotes from the teachers:

For the school generally, we don't have some for the class so we normally use soap and water to wash our hands. (TR 6)

What we do is that they use the water in the Jerri can bucket with soap and wash their hands so they can't use hand sanitizer because they don't have some. (TR 1)

Expensive

The ECCD teachers also indicated that the centres are not using the hand sanitizers because the hand sanitizer is quite expensive compare to soap. This theme was evident in the following quotes from the teachers:

For the children, because it is expensive the children cannot afford. (TR1) I can't provide them and the school too cannot afford it for them but with soap, the class can use one soap. (TR 4) If you ask for hand sanitizer, the school will give you soap instead. They will tell you to use it for the mean time. If things work well, we will buy the hand sanitizers for you. Insufficient fund is the main problem. (TR7)

Teachers have

The ECCD teachers also indicated that they usually have their personal hand sanitizers. This theme was evident in the following quotes from the teachers:

In fact, for the hand sanitizer, we as teachers we have one in our various bags (TR1)

We [teachers] use it, we are having one there but for them [the children], I will say no. (TR5)

Some children have

The teachers also indicated that there were some of the children who had hand sanitizers and used them in school. This theme was evident in the following quotes from the teachers:

The kids, some of them, they have it [hand sanitizer] in their bags so after washroom, they use it. (TR6)

It has been introduced already. The children they know, most of them even have the small one. (TR3)

Contrary to these findings from the ECCD teachers was a perspective of another teacher who explained that because a child could possibly ingest the hand sanitizer into the mouth and result in negative effect they do not use it at all. This she indicated by saying:

The hand sanitizer is used for sanitizing the hands but a child may not be aware or may mistakenly put it into the mouth so it may bring crisis so we don't practice it. (TR8)

Tables 11 and 12 present the summary of the findings of the interview on health and safety practices. In answering the question as to why ECCD centre Heads and teachers in the Cape Coast Metropolis did not do so well in meeting the health and safety standards that looked at centres requiring doctor's report and the use of hand sanitizers in the centres, it was found that ECCD centre Heads did not see it as their responsibility to require doctor's report from a child who was absent from school due to illness. All that they are expecting is for the parent to bring to school a healthy child.

Table 11: Themes identified from interview on ECCD centres requiring doctor's report from children who were absent from school due

| το 1 | iness | | |
|-----------|-----------------------|----------|-----------------------------|
| Theme | Meaning | Number | Evidence from the Data |
| | | of codes | |
| | | Assigned | |
| We don't | ECCD centres do not | 7 | "No, they don't bring any |
| bother to | ask of any Doctor's | | report and we don't even |
| Ask. | report from children | | bother to ask because you |
| | who were sick and | | have sent your child to the |
| | did not go to school. | | hospital, what do we have |
| | | | to ask. What we are |
| | | | expecting is that if the |
| | | | child is well, you bring |
| | | | him back to school". |
| | | | |

| Theme | Meaning | Number | Evidence from the Data |
|-----------|---------------------|----------|-------------------------------|
| | | of codes | |
| | | Assigned | |
| Water and | The children use | 10 | "For the school generally, |
| Soap | water and soap to | 13 | we don't have some for the |
| | wash their hands | | class so we normally use |
| | instead of hand | | soap and water to wash our |
| | sanitizer | | hands". |
| Expensive | The cost of hand | 6 | "For the children, because |
| | sanitizer is high | | it is expensive the children |
| | | | cannot afford". |
| Teachers | Teachers usually | 5 | "In fact, for the hand |
| Have | have their personal | | sanitizer, we as teachers we |
| | hand sanitizers | | have one in our various |
| | | | bags". |
| Some | Some children have | 2 | "The kids, some of them, |
| Children | their personal hand | | they have it in their bags so |
| Have | sanitizers they use | | after washroom, they use |
| | | | it". |
| | | | |

Table 12: Themes identified from interview on Hand Sanitizer Usage among ECCD teachers and Children

It was also found that even though some teachers and children had their personal hand sanitizers, the hand sanitizer was considered to be expensive compared to soap and water. It was found that ECCD centres practiced hand washing with soap and water and so much focus was not on the use of hand sanitizers as alternative to hand washing when the hands were not visibly soiled. Research Question 3: To what extent is centre auspices associated with quality of the physical environment of ECCD centres and health and safety practices in ECCD centres in Cape Coast Metropolis?

Chi-square analysis was used to test for association between centre auspices (private or public) and the quality of their physical environment (fair, good and excellent) as well as the health and safety practices of ECCD centres and teachers. The results are presented in different tables. Table 13 presents the results of the chi-square analysis of centre auspices by quality of the physical environment.

Table 13: Results of Chi-square Test and Descriptive Statistics for CentreAuspices by Quality of Physical Environment of ECCD centresin Cape Coast Metropolis

| | Quality of Physical Environment | | | | |
|----------------|---------------------------------|-----------------|----------------------|---------------|--|
| Auspices | <u>Fair (%)</u> | Good (%) | Excellent (%) | Total | |
| Public | 39 (66.1%) | 13 (22.0%) | 7 (11.9%) | 59 (100.0%) | |
| Private | 50 (53.2%) | 28 (29.8%) | 16 (17%) | 94 (100.0%) | |
| Total | 89 (58.2%) | 41 (26.8%) | 23 (15%) | 153 (100.0%) | |
| Note $N = 157$ | $*v^2 = 2.49 \text{ df} = 2$ | Numbers in pare | nthesis indicate roy | v percentages | |

Note. N = 153. $*\chi^2$ = 2.49, df = 2. Numbers in parenthesis indicate row percentages. *p = .288

The test of association result indicates that centre auspices is not statistically associated with the quality of the physical environment of the centre $[\chi^2 (2, N = 153) = 2.49, p > .05]$. These results suggest that there is no significant difference between private and public ECCD centres when it comes to the quality of their physical environment. Quality of the physical environment is similar for both private and public ECCD centres in the Cape Coast Metropolis.

Table 14 contains the results of chi-square analyses for association between centre auspices and five health and safety practices of the ECCD centres. From the results, centre auspices was found to be associated with keeping records of doctor's notes [χ^2 (1, N = 160) = 7.27, p = .007, ϕ = .227] and having immunization records up to date [χ^2 (1, N = 160) = 4.35, p = .037, ϕ = .184].

Table 14: Results of Chi-square Test and Descriptive Statistics for CentreAuspices by Health and Safety Practices of ECCD centres inCape Coast Metropolis

| Practices | | Standard Not | Standard Met | $\chi^{2}(1)$ | p |
|-------------------------|---------------|--------------|--------------------------|---------------|------|
| | | Met | | | |
| Copies of doctor's repo | rt are kept. | | 3 | 7.27 | .007 |
| | | | | | |
| Public | | 45 (76.3%) | 14 (23.7%) | | |
| Private | | 54 (53.5%) | 47 (46.5%) | | |
| Handwashing procedure | posted. | | | 1.84 | .174 |
| Public | | 11 (18.6%) | 48 (81.4%) | | |
| Private | | 30 (29.7%) | 71 (70. <mark>3%)</mark> | | |
| Records on sick childre | en. | | | 0.18 | .669 |
| Public | | 16 (27.1%) | 43 (72.9%) | | |
| Private | | 23 (22.8%) | 78 (77.2%) | | |
| Centre has health and s | afety | | | 1.04 | .306 |
| policies. | | | | | |
| Public | | 14 (23.7%) | 45 (76.3%) | | |
| Private | | 16 (15.8%) | 85 (84.2%) | | |
| Immunization records a | re all up-to- | | | 4.35 | .037 |
| date. | | | | | |
| Public | | 13 (22.0%) | 46 (78.0%) | | |
| Private | | 9 (8.9%) | 92 (91.1%) | | |

Forty seven percent of private centres compared to 24% of public centres, met the standard of keeping records of doctor's notes. Private centres were

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more likely to meet the standard of keeping records of doctor's notes. Even though there was a statistically significant difference in private and public centre regarding their health and safety practice, the effect of centre auspices on the health and safety practice (keeping records of doctor's notes) is small. When it comes to the practice of centres having children's immunization records all up to date, 91% of private centres compared to 78% of public centres met the standard.

Private centres were more likely to meet the standard of having children's immunization records all up to date. The effect of centre auspices on the health and safety practice (children's immunization records all up to date) is small. Table 15 contains the results of chi-square analyses for association between centre auspices and eleven health and safety practices of the ECCD teachers. The results showed that there was significant association between centre auspices and seven of the health and safety practices of the teachers.

Centre auspices was found to be associated with disinfecting shared toys and mouthed toys before each child uses it $[\chi^2 (1, N = 462) = 26.18, p = .000, \phi$ = .243]. Centre auspices was also found to be associated with encouraging children (but not force) to try new foods $[\chi^2 (1, N = 462) = 5.01, p = .025, \phi =$.110], using disposable gloves when handling blood and blood containing body fluids $[\chi^2 (1, N = 462) = 10.68, p = .001, \phi = .158]$. Other practices that showed an association includes the practice of ensuring that pest breeding areas are not on site $[\chi^2 (1, N = 462) = 5.26, p = .022, \phi = .113]$ as well as cleaning floor with dis-infectants any time the room is messed up $[\chi^2 (1, N = 462) = 27.24, p <$ = .000, $\phi = .250$].

| | | | 7 | |
|--------------------------------------|---------------------|--------------|------------|----------|
| Practices | Standard Not Met | Standard Met | χ-(1) | <i>p</i> |
| Hand sanitizer used as alternative. | | | 3.56 | .059 |
| Public | 66 (57.9%) | 48 (42.1%) | | |
| Private | 164 (47.1%) | 184 (52.9%) | | |
| Toys are disinfected after use. | | | 26.18 | .000 |
| Public | 60 (52.6%) | 54 (47.4%) | | |
| Private | 91 (26.1%) | 257 (73.9%) | | |
| Children are encouraged to try | | | 5.01 | .025 |
| new foods. | | | | |
| Public | 34 (29.8%) | 80 (70.2%) | | |
| Private | 67 (19.3%) | 281 (80.7%) | - <u>_</u> | <u></u> |
| Disposable gloves are used. | | | 10.68 | .001 |
| Public | 35 (30.7%) | 79 (69.3%) | | |
| Private | 56 (53.5%) | 292 (83.9%) | | |
| Pest breeding areas are not on site. | | | 5.26 | .022 |
| Public | 30 (26.3%) | 84 (73.7%) | | |
| Private | 56 (16.1%) | 292 (83.9%) | | |
| Dangerous items are out of reach | | | 2.91 | .088 |
| of children. | | | | |
| Public | 24 (21.1%) | 90 (78.9%) | | |
| Private | 48 (13.8%) | 300 (86.2%) | | |
| Strings are out of reach of | | | 1.91 | .166 |
| children. | | | | |
| Public | 21 (18.4%) | 93 (81.6%) | | |
| Private | 44 (12.6%) | 304 (87.4%) | | |
| Floors are cleaned with | | | 27.24 | .000 |
| Public | 33 (28.9%) | 81 (71.1%) | | |
| Private | 31 (8.9%) | 317 (91.1%) | | |
| Equipment and toys are in safe | 51 (0.770) | 517 (71.170) | 8 95 | 003 |
| conditions | | | 0.75 | .005 |
| Public | 24 (21.1%) | 90 (78.9%) | | |
| Private | 34 (9.8%) | 314 (90.2%) | | |
| Supervision of children when | | | 35.69 | .000 |
| feeding. | | | | |
| Public | 32 (28.1%) | 82 (71.9%) | | |
| Private | 23 (6.6%) | 325 (93.4%) | | |
| No sharing of children's personal | | | 0.43 | .509 |
| items. | | | | |
| Public | 15 (13.2%) | 99 (86.8%) | | |
| Private | 36 (10.3%) | 312 (89.7%) | | |

Table 15: Results of Chi-square Test and Descriptive Statistics for CentreAuspices by Health and Safety Practices of ECCD Teachers inCape Coast Metropolis

Other practices that showed an association also include checking toys and equipment to ensure they are in safe condition before children play with them $[\chi^2 (1, N = 462) = 8.95, p = .003, \phi = .147]$ and actively supervising children who can feed themselves and also being at an arm's reach of the feeding table $[\chi^2 (1, N = 462) = 35.69, p = .000, \phi = .286]$. Seventy four percent of teachers in private ECCD centres compared to 47% of those in public ECCD centres met the standard of disinfecting shared toys and mouthed toys before each child uses it.

Teachers in private centres were more likely to meet the standard. The effect of centre auspices on the health and safety practice (disinfecting shared toys and mouthed toys before each child uses it) is small. Eighty one percent of teachers in private ECCD centres compared to 70% of those in public ECCD centres met the standard of encouraging children (but not force) to try new foods. Teachers in private centres were more likely to meet the standard. The effect of centre auspices on the health and safety practice (disinfecting shared toys and mouthed toys before each child uses it) is small. Eighty four percent of teachers in private ECCD centres compared to 69% of those in public ECCD centres met the standard of using disposable gloves when handling blood and blood containing body fluids.

Eighty four percent of teachers in private ECCD centres compared to 74% of those in public ECCD centres met the standard of ensuring that pest breeding areas are not on site. Teachers in private centres were more likely to meet the standard. The effect of centre auspices on the health and safety practice (ensuring that pest breeding areas are not on site) is small. Ninety one percent of teachers in private ECCD centres compared to 78% of those in

public ECCD centres met the standard of cleaning floor with dis-infectants any time the room is messed up. Teachers in private centres were more likely to meet the standard. The effect of centre auspices on the health and safety practice (cleaning floor with dis-infectants any time the room is messed up) is medium.

Ninety percent of teachers in private ECCD centres compared to 79% of those in public ECCD centres met the standard of checking toys and equipment to ensure they are in safe condition before children play with them. Teachers in private centres were more likely to meet the standard. The effect of centre auspices on the health and safety practice (checking toys and equipment to ensure they are in safe condition before children play with them) is small. Ninety three percent of teachers in private ECCD centres compared to 72% of those in public ECCD centres met the standard of actively supervising children who can feed themselves and also being at an arm's reach of the feeding table. Teachers in private centres were more likely to meet the standard. The effect of centre auspices on the health and safety practice (actively supervising children who can feed themselves and also being at an arm's reach of the feeding table. Teachers in private centres were more likely to meet the standard. The effect of centre auspices on the health and safety practice (actively supervising children who can feed themselves and also being at an arm's reach of the feeding table.

Interview with ECCD centre Heads and Teachers: Centre Auspices associated with Quality of the Physical Environment of ECCD centres and Health and Safety Practices

This section presents the findings of the follow-up interview aimed at finding out the thoughts of Heads and teachers on whether centre auspices is associated with quality of the physical environment of ECCD centres and their health and safety practices.

Do you believe being a public or private ECCD centre affects the quality of the physical environment as well as the health and safety practices?

When ECCD Heads and teachers were asked as to whether they believed that being a public or private ECCD centre affects the quality of the physical environment as well as the health and safety practices, most of them responded positively. They indicated that most of the time private was better compared to public ECCD centres. In explaining why they responded that way, four themes came up: "National Cake", "For Profit", Nice Facility" and "Responsible Parents".

National cake

The ECCD Heads and teachers indicated that when it comes to the public ECCD centres, it is government who is expected to provide everything and government has a lot of issues to deal with and so it affects their quality in terms of physical environment and some health and safety issues. This theme was evident in the following quotes from the Heads and teachers:

Yea.... I believe that [private is better]. With the public, everything is done by the government and if the government..... the national cake you don't get yours it means your class will not be well equipped your environment will not be well equipped. (HR14)

I will say the private sector because, normally the government sector everything will be depending on the government, the government to bring everything for them but...... for the government, the government will promise this day but maybe they cannot. (TR4)

For profit

There were also indications from the ECCD Heads and teachers that private ECCD centres are in business to make profit. This theme was evident in the following quotes from the Heads and teachers:

For this one, I will give it to the private schools because for them, because they are taking their money, they are doing it for their own profit or something, they always make sure that these facilities, the equipment that they have there is in a good shape. (TR5)

It is all about funds because private man is motivated by profit, the public we know it, it is about the government, government lack resources..... but private, its far better (HR15)

Nice facility

The ECCD Heads and teachers also indicated that private ECCD centres have facilities that are nice and conducive. This theme was evident in the following quotes from the Heads and teachers:

But from what I hear, some of the day care schools have nice facilities; beds; have playing grounds and nurses too. (HR9)

Yes, private schools are doing better than the public schools. They have all the facilities, the place is neat, the place is neat well furnished not like our place. Look at our floor, last term it was pot holes, last term we had to do demonstration against the head teacher before he was able to do this for us so private schools, are better. (HR10)

With the private they are doing it for money so they make sure that the physical environment, they beautify the physical environment and that attracts the health and safety of the child because if you to go private

school, well equipped private school, you see dustbins all over, you see well decorated things at least even if the child is sick and enters the school he gets healed. (HR14)

Responsible parents

The ECCD Heads and teachers also indicated that parents with children in private ECCD centres are responsible. This theme was evident in the following quotes from the Heads and teachers:

Parent who take their wards to private schools [ECCD centre] are responsible than those who take their wards to public schools [ECCD centre] so they do provide things, they pay monthly, for the proprietor or proprietress to do what the school plead or needs. They make sure they have all their things in order. (TR1)

In private schools you will see that they are sitting in classes, when parents are sending their children to school, you will see that they are wearing shoes, so they see the neat atmosphere. When you come to the public schools, parents are not there to guide the children to class so these little children when some come to school, you could see that there is urine all over their body and you will ask where is the parent. (HR5)

Contrary to these findings from the ECCD Heads and teachers was a perspective of an ECCD Head of a private centre who believed that public ECCD centres have an advantage over private centres. This she indicated by saying:

I will not say private is better than the public.... you go to certain [private] schoolsthey do not have anything but we [private ECCD centres] cannot compare ourselves to public schools. The government comes to

provide these facilities and sometimes, these NGO's also come around, they are able to give them something but in private schools, some actually

pay huge sums of money to get this physical equipment for their children

to use. (HR 13)

Table 16 presents the summary of the findings of the interview on centre auspices.

| Thoma | Maaning | Number of | Fuidance from the Date |
|---------------|--------------------------|-----------|--------------------------------|
| Theme | Meaning | codes | Evidence from the Data |
| | | Assigned | |
| National | Government is | 12 | "Yea I believe that |
| Cake | expected to provide | | [private is better]. With the |
| | everything in Public | | public, everything is done by |
| | ECCD centres | | the government and if the |
| | | | you don't get yours it means |
| | | | your class will not be well |
| | | | equipped your environment |
| | | | will not be well equipped" |
| For Profit | Private ECCD centres | 10 | "It is all about funds because |
| | are in business to make | | private man is motivated by |
| | profit | | profit, the public we know it, |
| | | | it is about the government, |
| | | | resourcesbut private, its |
| | | | far better". |
| | | | " from what I have some of |
| Nice Facility | Private ECCD centres | 9 | the [private] day care schools |
| | nice and conducive | | have nice facilities; beds; |
| | | | have playing grounds and |
| | | | nurses too". |
| Responsible | Parents with children in | 5 | "Parent who take their wards |
| Parents | private ECCD centres | 0 | to private schools [ECCD |
| | are responsible. | | centre] are responsible than |
| | | | those who take their wards to |
| | | | public schools [ECCD centre] |
| | | | they pay monthly They |
| | | | make sure they have all their |
| | | | things in order". |

Table 16: Themes identified from interview on centre auspices associated with quality of physical environment and health and safety practices

In answering the question as to whether ECCD centre Heads and teachers in the Cape Coast Metropolis believed that being a public or private ECCD centre affects the quality of the physical environment as well as the health and safety practices, it was found that most ECCD Heads and teachers believed that private ECCD centre were better compared to public ECCD centres. They explained that because private centres are in for profit, they ensure that their facilities are nice and besides they have parents who are responsible.

These parents are willing to pay and provide everything required from the private ECCD centre to ensure that the health and safety needs of the children are met. But for the public ECCD centres, because they rely solely on government, they have to wait until the resources gets to their turn which affects the quality of their physical environment as well as some of the health and safety practices.

Research Question 4: To what extent is teacher characteristics associated with their health and safety practices in ECCD centres in Cape Coast Metropolis?

Chi-square analysis was used to test for association between teacher characteristics (specialized training in ECCD and teacher-to-child ratio) and their health and safety practices. The results are presented in different tables. Table 17 presents the results of the chi-square analysis of specialized training in ECCD by health and safety practices. From the results there was generally no statistically significant association between specialized training in ECCD and most of the Health and safety practices. Out of the eleven, only one of the health and safety practices evidenced a significant association.

| of ECCD Teachers in Cape Coast Metropolis | | | | | | | |
|---|------------------------|--------------|---------------|------|--|--|--|
| Practices | Standard Not Met | Standard Met | $\chi^{2}(1)$ | р | | | |
| Hand sanitizer used as alternative. | | | 3.86 | .049 | | | |
| No | 123 (45.7%) | 146 (54.3%) | | | | | |
| Yes | 107 (55.4%) | 86 (44.6%) | | | | | |
| Toys are disinfected after use. | | - | 0.00 | .933 | | | |
| No | 87 (32.3%) | 182 (67.7%) | | | | | |
| Yes | 64 (33.2%) | 129 (66.8%) | | | | | |
| Children are encouraged to try | | | 1.68 | .194 | | | |
| new foods. | | | | | | | |
| No | 65 (24.2%) | 204 (75.8%) | | | | | |
| Yes | 36 (18.7%) | 157 (81.3%) | | | | | |
| Disposable gloves are used. | | | 1.14 | .284 | | | |
| No | 58 (21.6%) | 211 (78.4%) | | | | | |
| Yes | 33 (17.1%) | 160 (82.9%) | | | | | |
| Pest breeding areas are not on site. | 35 (11110) | | 5.38 | .020 | | | |
| Ne | 40 (14 00/) | 220 (85 104) | | | | | |
| No | 40 (14.9%) | 229(63.170) | | | | | |
| Dangerous items are out of reach | 40 (23.870) | 147 (70.270) | 1 32 | 250 | | | |
| of abildron | | | 1.02 | .200 | | | |
| of children. | 27 (12 80() | 222 (86 20/) | | | | | |
| No | 37(13.8%) 35(18.1%) | 232(80.2%) | | | | | |
| fes Strings are out of reach of | 35 (18.170) | 130 (81.970) | 0.03 | 859 | | | |
| Strings are out of reach of | | | 60.05 | .057 | | | |
| children. | 20 (14 50() | 220 (85 50/) | | | | | |
| No | 39 (14.5%) | 230(85.5%) | | | | | |
| Yes | 20 (13.5%) | 107 (80.376) | 1.05 | 304 | | | |
| Floors are cleaned with | | | 1.05 | +UC. | | | |
| disinfectants. | 22 (10 20/) | 226 (87 70/) | | | | | |
| No | 33 (12.3%) | 236 (87.7%) | | | | | |
| Yes | 31 (16.1%) | 162 (83.9%) | 0.04 | 825 | | | |
| Equipment and toys are in sale | | | 0.04 | .000 | | | |
| conditions. | | | | | | | |
| No | 35 (13.0%) | 234 (87.0%) | | | | | |
| Yes | 23 (11.9%) | 1/0 (88.1%) | 1 72 | 100 | | | |
| Supervision of children when | | | 1.75 | .100 | | | |
| feeding. | | | | | | | |
| No | 27 (10.0%) | 242 (90.0%) | | | | | |
| Yes | 28 (14.5%) | 165 (85.5%) | 0.40 | 600 | | | |
| No sharing of children's personal | | | 0.43 | .509 | | | |
| items. | | | | | | | |
| No | 27 (10.0%) | 242 (90.0%) | | | | | |
| Yes | 24 (12.4%) | 169 (87.6%) | | | | | |

Table 17: Results of Chi-square Test and Descriptive Statistics forSpecialized Training in ECCD by Health and Safety Practicesof ECCD Teachers in Cape Coast Metropolis

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Specialized training in ECCD was found to be associated with the practice of ensuring that pest breeding areas were not on site $[\chi^2 (1, N = 462) = 5.38, p =$.020, $\phi = -.114]$. Seventy six percent of teachers with specialized training in ECCD compared to 85% of those without specialized training in ECCD met the standard ensuring that pest breeding areas were not on site. Teachers without specialized training in ECCD were rather more likely to meet the standard of ensuring that pest breeding areas were not on site.

The effect of specialized training in ECCD on the health and safety practice (pest breeding areas are not on site) is small. Table 18 contains the results of chi-square analyses for association between teacher-to-child ratio by health and safety practices of the ECCD teachers. From the results it is showed that out of the eleven health and safety practices, there was significant association between teacher-to-child ratio and two of the health and safety practices of the ECCD teachers. Teacher-to-child ratio was found to be associated with encouraging children (but not force) to try new foods [χ^2 (1, N = 462) = 7.48, p = .006, ϕ = -.133] and the practice of teachers actively supervising children who can feed themselves and also being at an arm's reach of the feeding table [χ^2 (1, N = 462) = 4.16, p = .041, ϕ = -.102].

Seventy four percent of teachers in classrooms with low teacher-to-child ratio compared to 85% of teachers in classrooms with high teacher-to-child ratio met the standard of encouraging children (but not force) to try new foods. Teachers in classrooms with high teacher-to-child ratio were rather more likely to meet the standard. The effect of teacher-to-child ratio on the health and safety practice (encouraging children (but not force) to try new foods) is small.

| | • | | | |
|--------------------------------------|---------------------|--------------|---------------|------|
| Practices | Standard Not Met | Standard Met | $\chi^{2}(1)$ | p |
| Hand sanitizer used as alternative. | | | 0.61 | .433 |
| High | 85 (47.2%) | 95 (52.8%) | | |
| Low | 145 (51.4%) | 137 (48.6%) | | |
| Toys are disinfected after use. | | | 3.60 | .058 |
| High | 49 (27.2%) | 131 (72.8%) | | |
| Low | 102 (36.2%) | 180 (63.8%) | | |
| Children are encouraged to try | | | 7.48 | .006 |
| new foods. | | | | |
| High | 27 (15.0%) | 153 (85.0%) | | |
| Low | 74 (26.2%) | 208 (73.8%) | | |
| Disposable gloves are used. | | | 3.64 | .056 |
| High | 27 (15.0%) | 153 (85.0%) | | |
| Low | 64 (22.7%) | 218(77.3%) | | |
| Pest breeding areas are not on site. | 01(22.170) | | 0.96 | .326 |
| | | | | |
| High | 29 (16.1%) | 151 (83.9%) | | |
| Low | 57 (20.2%) | 225 (79.8%) | 0.00 | 005 |
| Dangerous items are out of reach | | | 0.02 | .000 |
| of children. | 7.0.00 | | | |
| High | 27 (15.0%) | 153 (85.0%) | | |
| Low | 45 (16.0%) | 237 (84.0%) | 0.00 | 1.00 |
| Strings are out of reach of | | | 0.00 | 1.00 |
| children. | | | | |
| High | 25 (13.9%) | 155 (86.1%) | | |
| Low | 40 (14.2%) | 242 (85.8%) | 0.00 | 242 |
| Floors are cleaned with | | | 0.90 | .545 |
| disinfectants. | | | | |
| High | 21 (11.7%) | 159 (88.3%) | | |
| Low | 43 (15.2%) | 239 (84.8%) | 1.20 | 220 |
| Equipment and toys are in safe | | | 1.59 | .238 |
| conditions. | | | | |
| High | 18 (10.0%) | 162 (90.0%) | | |
| Low | 40 (14.2%) | 242 (85.8%) | 416 | 041 |
| Supervision of children when | | | 4.10 | .041 |
| feeding. | | | | |
| High | 14 (7.8%) | 166 (92.2%) | | |
| Low | 41 (14.3%) | 241 (83.3%) | 1.00 | 150 |
| No sharing of children's personal | | | 1.90 | .139 |
| items. | 06 (10 00/) | 166 /07 10/ | | |
| High | 25 (13.9%) | 155 (86.1%) | | |
| Low | 20 (9.2%) | 200 (90.8%) | | |

Table 18: Results of Chi-square Test and Descriptive Statistics forTeacher to Child Ratio by Health and Safety Practices ofECCD Teachers in Cape Coast Metropolis

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Eighty six percent of teachers in classrooms with low teacher-to-child ratio compared to 92% of teachers in classrooms with high teacher-to-child ratio met the standard of actively supervising children who can feed themselves and also being at an arm's reach of the feeding table. Teachers in classrooms with high teacher-to-child ratio were rather more likely to meet the standard. The effect of teacher-to-child ratio on the health and safety practice (actively supervising children who can feed themselves and also being at an arm's reach of the feeding table) is small.

The findings of this study revealed that when it comes to the teacher characteristics that looked at formal education in ECCD (specialized training), there was generally no statistical significant relationship between formal education on ECCD and most of the health and safety practices of the teachers.

Interview with ECCD centre Heads and Teachers: Teacher Qualification associated with Health and Safety Practices

This section presents the findings of the follow-up interview aimed at finding out from ECCD Heads and teachers if they believed that a teacher's qualification will determine how good they will take care of the children.

Do you believe that a teacher's qualifications will determine how good they will take care of the children?

Most ECCD Heads and teachers responded negatively to the question. They indicated that it is not necessarily the qualification of ECCD teachers that determines if they will take good care of the children. In explaining why they responded that way, three themes came up: "Desire", "A Calling" and "Skill".

Desire

The ECCD Heads and teachers indicated that for a person to take good care of a child, he or she must be willing and have the desire. This theme was evident in the following quotes from the Heads and teachers:

If you the person has the desire, if challenge comes you will know that person can do it but if the person has his or her masters and the person desires is not to do the work, how is the person going to do the work? It will not be effective. (TR1)

No, I don't believe in that. I believe in the willingness, if you are willing to help them but with the degree no, the willingness of the person to just understand them. (HR14)

A Calling

The ECCD Heads and teachers also indicated that taking care of children is a call from God. This theme was evident in the following quotes from the Heads and teachers:

I will say that pre-school care is a calling from the Lord himself, if you don't have passion, you can't do. (TR3)

The teaching itself is a sacrificial work and it is a call I will say. If someone has gone to training college, university and does not know how to handle children, then it's baseless. (HR13)

Skill

There were also indications from the ECCD Heads and teachers that a person can take care of children when he or she has the skill to do so.

No as for me I don't think so, but by skills or by training because when we go to some sectors some people are not having let say master's but they can work so it's by skills or by training. (TR4)

I always say that teaching is a skill that we need to, so even if,you have this master's or PhD and you don't know how to, you don't have the technical knowhow, no matter what you can't teach them especially when it comes to these people [children] so it is a skill. (TR5)

Some of the ECCD Heads and teachers however had contrary view to the findings. They believed that having a qualification helps a teacher to take good care of children. This they indicated by saying:

You've gone to school to acquire additional knowledge so it helps you to take good care of the children. For example, we recently went for a workshop about children learning and the things that we were taught when I put it into practice, I have realized that it is really helping. So, acquiring more knowledge helps if it is being put into practice. (HR9) Yes, I believe because those with diploma or degree in child care, they know how to handle the kids, they know how to relate with them so if you **NOBIS** get one like this, you are ok, you know that he will do or he or she will perform well (HR 11)

Table 19 presents the summary of the findings of the interview on teacher qualification. In answering the question as to whether ECCD centre Heads and teachers in the Cape Coast Metropolis believed that a teacher's qualifications will determine how good they will take care of the children, it was found that as much as ECCD centre Heads and teachers believed that having qualification is necessary, when it comes to taking good care of children, it takes more than just having the qualification but that the person should have

the desire, the call from God and the skill to handle children.

| Theme | Meaning | Number of codes | Evidence from the Data |
|-----------|---|--------------------|---|
| Desire | e For a person to take good care of a child, he or she must be willing and have the desire. | | "If you the person has the desire, if challenge comes you will know that person can do it but if the person has his or her masters and the |
| | | | person desires is not to do the work, how is the person going to do the work? It will not be effective". |
| A Calling | Taking care of children is a call from God | 8 | "I will say that pre- school care is a calling from the Lord himself, if you don't have passion, you can't do". |
| Skill | A person can take care of children when he or she has the skill to do so. | 8 | "No as for me I don't think so, but by skills or by training because when we go to some sectors some people are not having let say master's but they can work so it's by skills or by training". |

Table 19: Themes identified from interview on teacher qualification associated with health and safety practices

Discussion of Results on Quality of Physical Environment of ECCD

Centres

Data from the study were analysed to assess the quality of the physical environment of ECCD centres in the Cape Coast Metropolis of Ghana with the intent of answering research question one. The results of the present study suggest that the overall physical environment of ECCD centres in the Cape Coast Metropolis is of a fair quality. Majority of ECCD centres scored fairly

on all the four main parts of the environment which are "planning of the centre", "building as a whole", indoor spaces" and "outdoor spaces". Consistent with the overall quality ratings of the physical environment, is the results for the 12 physical environment indicators which revealed that ECCD centres rated fairly in half of the indicators.

This result echoes similar research findings in Ghana which indicated that when it comes to Ashaiman (Accra), wider preschool infrastructure was generally satisfactory (Bidwell & Watine, 2014). Another study involving Cape Coast School for the Deaf also found that majority of teachers in preschools for the Deaf agreed that most preschools for the hearing impaired had environments and indoor and outdoor learning spaces that were conducive for the children (Larbi, 2011).

Similar research by Hassan and Moore (2010) found that ECCD centres in Malaysia rated fair on the quality of physical environment in their centres. Other studies in Kuala Lumpur and the Klang Valley, Malaysia (Hassan, 2012) and Greek day-care centres (Rentzou, 2014) also found out that quality of physical environment of the centres was of low and minimal quality respectively. The finding of this current study implies that the quality of the physical environment of ECCD centres in the Cape Coast Metropolis is neither good nor excellent.

This means that effort has to be made to improve the quality of the physical environment of these centres in the Metropolis. This is because research has shown that children in centres with higher quality physical environments display fewer worried and upset behaviours (Smith, 2007); the environment influences the children's play behaviour, leading to learning
(Abbas *et al.*, 2012); it also impact their physical activity and as well as their health and safety (Dalli & Rockel, 2012; Dalli et al., 2011; Expert Advisory Panel on Quality Early Childhood Education and Care, 2009).

Research has also shown that good quality physical environments in ECCD centres is helpful for young children from disadvantaged backgrounds as they provide access to learning materials and experiences not provided in their homes (Dearing *et al.*, 2009). Research has generally shown evidence of a correlation between ECCD centre design and positive development among preschool children (Abbas & Ghazali, 2010) and so for children in ECCD centres in the Cape Coast Metropolis to develop positively, the designed physical environment must be improved to a high quality.

This current study also revealed from the profile of the 12 physical environment indicators that the most obvious strength of ECCD centres in the Cape Coast Metropolis appears to be 'Location and Site', one of the subscales captured under outdoor spaces which assessed the location of the centre within the community and the block of land on which the centre was situated. The finding indicates that when it comes to the outdoor spaces dimension of the physical environment, the location and site of centres in the Cape Coast Metropolis is good.

This results can be attributed to the fact that the Cape Coast Metropolis is not a heavy industrial area but rather enjoys a moderate business climate which includes petty trading, crafts and other manufacturing, institutional workers, professionals (largely teachers), agriculture (farming and fishing) and fish processing (Cape Coast Metropolitan Assembly, 2014). It is therefore expected that the location and site of most of the centres in the Metropolis do

not have to expose children to notable harmful pollution especially from neighboring industrial facilities or contamination from past industrial use of a land.

This finding is good and worth noting and efforts has to be made by all stake holders to maintain the outdoor environment quality especially in areas where children attend school not forgetting the fact that children in particular are susceptible to the negative health effects of their unsafe environment. Reports indicate that while 23% of all deaths globally are linked to environmental factors, when it is shared, the percentage rises to 26% for children under the age of 5 (UNEP, 2016) and as a matter of fact, more than one quarter of the 6.6 million under-five child deaths every year are associated with environment-related causes and conditions (Prüss-Ustün, *et al.*, 2016).

This current study further found that a major area of weakness as shown by the profile of the 12 physical environment indicators is the "Centre Size and Module". The result implies that most centres in the Cape Coast Metropolis have more children in the centre than the ideal capacity of an early childhood centre and the reason for this result can be attributed to the fact that most of these centres are not following the recommended number of children per a class and per the required space for each child both indoor and outdoor (Child Care Division Ministry of Community Development, Youth and Sports, 2011).

This finding however is not too surprising because over the years Ghana has seen a shot up in the preschool enrolment and has even exceeded the nation's target of both gross and net enrollment ratios as at the 2013/14 academic year (UNESCO, 2015) plus pre-primary enrolment rates in Ghana as

reported by the World Bank 2015 are some of the highest in the West African region (Aber *et al.*, 2016). In fact a research in Accra, Ghana found that there were large numbers of preschool options with high participation rates even among the poorest (Bidwell & Watine, 2014).

But then even though Ghana has made progress in the field of ECCD, the Ministry of Education (2013) indicated that average class sizes of 64 children in kindergarten makes it difficult for teachers to assess the progress of each individual child. In a review of the evidence base on early childhood care and education in global context by Yoshikawa and Kabay (2015), it was reported that even though Ghana has made progress in the field of ECCD, quality is a critical concern as many kindergarten programmes are challenged by poor infrastructure, insufficient trained teachers as well as overcrowding.

If most centres in the Cape Coast Metropolis have more children than the ideal capacity, then it raises concerns because other features of the physical environment of ECCD centres which have been found to impact on children's health include numbers of children in the centre and noise levels (Dalli et al., 2011). Children in crowded preschools have been seen to be more prone to aggressive behaviours towards their classmates particularly as a result of clashes over insufficient resources such as toys (Evans, 2006). Children are also likely to have high stress level as a result of increase production of cortisol in the body due to psychological distress from overcrowding (Legrendre, 2003).

If children are exposed to crowding in several environments such as both at school and at home, then they are likely to experience poor mental health outcomes (Evans, 2006). The spread of infectious diseases among children in

crowded environment cannot be over emphasized and particularly when it comes to childcare centres, evidence points to the fact that among the numerous factors that influence the transmission of infectious agent is the total number of children at the centre (Nesti & Goldbaum, 2007).

Therefore children in ECCD centres in the Cape Coast metropolis are at a risk of poor respiratory health as they can get respiratory infections such as colds, sinusitis, pharyngitis, bronchitis among others (Nesti & Goldbaum, 2007) as well as meningitis infection (Clements *et al.*, 1994), meningococcal disease (Stanwell-Smith *et al.*, 1994) and childhood tuberculosis (Drucker *et al.*, 1994). And so ensuring that ECCD centres admit children to meet the capacity of the centre as per the space required per a child is key to ensuring the health and safety of these children.

Another area of weakness as shown by the profile of the 12 physical environment indicators is 'Home Bases'. This dimension assesses the spaces that are made available to cater for children's basic needs such as eating, sleeping, diaper changing, toilets as well as storage of personal belongings. The results showed that ECCD centres in the Cape Coast Metropolis did not do well on this dimension. Even though centres met the basic needs of the children by way of allowing children to sleep, eat, store personal belongings as well as changing diapers and or assisting children in toileting, some of the spaces for these activities were not clearly demarcated and there were no adequate room for these functions to be performed properly as required.

The implication of this finding is that children will be put at a risk of getting infections at the centre. The American Academy of Pediatrics (2011) recommends that ECCD centres should have designated areas specifically for

changing diapers which should be separated from any eating, food preparation and food storage areas as well as objects, such as toys, pacifiers, baby bottle among others. This is because research has found an association between fecal contamination and increased rate of diarrhea in ECCD centres (Kimberlin *et al.*, 2015).

Another area of weakness as shown by the profile of the 12 physical environment indicators is the "Common Core of Shared Facilities". This dimension of the physical environment evaluates that part of the building that includes the reception area, administration office(s), staff lounge, meeting or conference rooms, adults' toilets, kitchen, laundry, a multipurpose gym as well as storage. The results showed that even though ECCD centres in the Cape Coast Metropolis provided some shared facilities such as reception area, administration office(s), staff toilet, kitchen, laundry, and a storage area, they were not spaces that had adequate room to function as required.

This result implies that pressure will be put on the little space available in the school as both adults and children will have to share certain facilities such as toilets. In fact with the exception of one centre which had a room allocated for play activities and was spacious even to be used for indoor physical activities, the rest of the centres in the Metropolis did not provide the most important shared facility which is a gymnasium or an area inside the centre designated for physical motor activities such as running, climbing, playing ball among others especially when the weather compel the children to stay indoors.

The reason for this result could be due to lack of commitment on the part of owners of these centres to provide such facility but will rather use the space for classrooms in order to admit more children at the centres. Another area of

weakness as shown by the profile of the 12 physical environment indicators is 'Physical Activity Areas'. This dimension evaluates the indoor space primarily allocated for physical play by assessing the appropriateness of the area for a range of gross-motor physical activities such as hard surfaces for ball play, climbing equipment, display racks among others.

The results showed that ECCD centres in the Cape Coast Metropolis did not do well on this dimension too which implies that children in these centres do not get the opportunity to do enough physical activity while they are indoors which poses a health risk to children in these centres. Similar to this finding is a research that found that sedentary behaviour characterized 84% of the intervals observed indoors in preschools (Brown *et al.*, 2009) but then studies have also found that factors that can influence active behaviour in children in indoor environment of preschools, is the use of equipment and the size of the area available for play (Gubbels *et al.*, 2012; Raustorp *et al.*, 2012).

Studies that have investigated the relationship between childcare centres and preschoolers' physical activity have also established among others the association of high physical activity among children who attend pre-schools with sufficient indoor play spaces than those who attend schools without such supportive environment and infrastructure (Barbosa *et al.*, 2016; Cardon *et al.*, 2008; Dowda *et al.*, 2004; Pate *et al.*, 2004). A study of low-income U.S. preschoolers also found out that several aspects of the indoor environment were associated with moderate to vigorous physical activity, which indicated that the indoor area was not to be overlooked as an important site for physical activity (Henderson *et al.*, 2015).

Even though it has also been acknowledged that motor activity spaces take up a lot of room and are very expensive (Moore, 1997), the benefits of having such a facility for the children cannot be overlooked. Physical motor activities have been established as essential to the health and general wellbeing of young children as it promote healthy cognitive development, weight gain, good cardiovascular condition (Timmons *et al.*, 2007) as well as lower adiposity and increased bone density (Timmons *et al.*, 2012). It is therefore important that attention is given to indoor spaces provided in ECCD centres in the Cape Coast Metropolis especially spaces that will encourage physical activities among children when they are indoors.

The last but not least areas of weaknesses as shown by the profile of the 12 physical environment indicators were subscales that measured the 'Play Yards: Functional Needs' and 'Developmental Needs'. These dimensions of the physical environment looks at the play yard and assess it to see if it is developmentally challenging, interesting, friendly and comfortable. The results showed that when it comes to the outdoor spaces for play yards, even though ECCD centres in the Cape Coast Metropolis made provision of some sort, the quality as in meeting both the functional and developmental needs of children was not good.

This finding is similar to a research conducted by the Taskforce on Childhood Obesity Prevention in North Carolina (Moore & Marcus, 2011) that used an Outdoor Learning Environment Rating Scale to evaluate the opportunities children had for interaction with nature and found that less than 10 % of preschool settings rated as good. The finding of this current study also confirms an observation made by Woodhead (2009), indicating that most

school yards all over the world were just flat, hard, open surfaces that reflected a traditional belief that children's learning only took place in the classroom. This is how most of the play yards of ECCD centres in the Cape Coast Metropolis are.

follow-up The interviews revealed that ECCD Heads centre acknowledged the importance of play yard by explaining that children learn outdoors. This is supported by Expert Advisory Panel on Quality Early Childhood Education and Care (2009) who stated that time spent in outdoor areas, as well as opportunities to engage with natural materials has been pointed out as an essential way of promoting good learning and development among preschool children. The ECCD centre Heads also indicated that playing outdoors help with the upkeep of the children which goes to support other findings that spending some time in the sun during outdoor play helps improve children's health and minimize the risk of sick building syndrome which is usually linked to inadequate contact with natural daylight and fresh air in indoor settings (Joshi, 2008).

The ECCD centre Heads also indicated that children need to play so that **NOBIS** they do not become dull and research has indicated that three to five year olds in ECCD centres are most likely to be physically active when playing outdoors (Brown *et al.*, 2009). Research has shown that lack of physical activity in childhood is associated with physical inactivity in adolescence and adult life (Barros *et al.*, 2011) and also related to various health risk conditions in adulthood (Craigie *et al.*, 2011). It has also been found that low level of moderate to vigorous physical activity is highly associated with higher rates of cardio vascular risk in children from 8 to 11 years (Tanha *et al.*, 2011).

The implication of the current findings of this study for best practice is a key policy recommendation to the Cape Coast Metropolitan Education Service and Social Welfare Department to establish or adopt a standard physical environment structure plan for all ECCD centres and provide adequate budget for the enforcement of the regulations for operating an ECCD centre. The physical conditions, design and use of schools can promote the health of children, so schools also need to implement policies and procedures that can help prevent injuries and protect children from pollutants and diseases.

Discussion of Results on Health and Safety Practices in ECCD Centres

The findings of this study revealed that most of the ECCD centres in the Cape Coast Metropolis, as well as teachers in these centres met majority of the recommended health and safety standards. The reason for these results could be that because these are registered centres they had to at least meet the minimum health and safety requirement to operate in the Metropolis. Another reason could be that both directors of the ECCD centres and the teachers were knowledgeable about the recommended health and safety practices and hence were practicing them. In fact a study in Southern Ghana which assessed the knowledge of infection prevention in early childhood education centres in the Suhum Municipality revealed that the teachers had good knowledge about infection prevention measures and control (Siakwa & Offie, 2016).

The results of this current study is similar to a research by Crowley et al. (2013) which aimed at assessing the prevalence of regulatory noncompliance of licensed child care centres in Connecticut. Their findings revealed that most of the 676 centres were compliant with a majority of the child care regulations. A study in Indiana which aimed at describing the ECE programs that met the

key national health and safety standards (NHS), also revealed that all the 82 ECE programs involved in the study met the majority of NHS items (Alkon & Cole, 2012).

Another study that aimed at determining the preparedness of child care centres in Pennsylvania to respond to emergencies and disasters based on compliance with the national health and safety standards revealed that of the 496 centres, majority were compliant with the recommendations (Olympia *et al.*, 2010). Even though these research works found majority of the centres meeting the recommended health and safety standards, attention was drawn to the fact that the few standards that were not met by these centres needed to be improved.

The results of the current study revealed that when it comes to the practice of ECCD centres requiring and keeping copies of doctor's report on children who were out due to illness, 62% of the centres did not meet the standard. During the follow-up interviews, ECCD centre Heads indicated that they did not bother to ask of a copy of a doctor's report because all that they were concern with was that the child who was ill had returned to school well and healthy. The implication of this finding is that these ECCD centres will not be previewed to the medical conditions the children under their care had been in and this will affect their ability to meet the unique needs of these children.

Child Care Law Centre (2002) had long indicated that while children are in ECCD centres, they develop unique health care needs and exhibits developmental differences. So it is important that every centre makes effort to help accommodate as quickly as possible these health care needs to reduce delay or interruption of care (Aronson, 2002). All these can be achieved if

ECCD centres require and keep doctor's report on children who were absent from school due to illness. The results of the current study also revealed that when it comes to the practice of ECCD teachers and children using alcholbased hand sanitizers as an alternative to handwashing with soap and water, if hands are not visibily soiled, 50% of the teachers did not meet the standard.

The follow-up interview revealed that even though teachers and some of the children had hand sanitizer, it was generally not available for use. This finding is consistent with the study in the Suhum Municipality of Ghana which indicated that alcohol-based sanitizers were not readily available for teachers and school children for use during hand hygiene (Siakwa & Offie, 2016). Some teachers in the current study also indicated that they were not using hand sanitizers because they were afraid that the children may ingest it and cause a problem. This fear is not too surprising because Santos *et al.* (2017) had warned that caution needs to be taken by ECCD care givers or teachers when it comes to the use of hand sanitizers as the contents of the alcohol based hand sanitizer can be toxic if significant amount is swallowed.

However it does not mean hand sanitizers should not be used at all but **NOBIS** children have to be monitored and supervised to ensure that the product is used appropriately. A study in Colombia involving 42 childcare centres which were faced with lack of water and sinks that were not functioning, found out that alcohol-based hand sanitizers were safe and effective in preventing acute diarrheal disease and respiratory infection (Correa *et al.*, 2012). Another study found that when it comes to prevention of respiratory infections in children in kindergarten, the use of hand sanitizer every hour was a more optimal time interval for use (Pandejpong *et al.*, 2012). Generally research has shown that

alcohol-based hand sanitizers, when used correctly help reduce the spread of disease (Aronson & Shope, 2017).

The ECCD teachers in the current study further explained that hand sanitizers were considered as expensive compared to handwashing with soap and water. And so they were practicing hand washing rather than using hand sanitizers. This finding is similar to an intervention study in Bangladesh which found that hand sanitizer usage was well accepted among households in a lowincome urban area even though there was no significant improvement in frequency of hand hygiene behavior compared with a water and soap intervention (Luby *et al.*, 2011).

The implications of this finding is that if ECCD teachers and children are practicing hand washing with soap and water then there is hope that there will be a reduction in the spread of infections in ECCD centres in the Cape Coast Metropolis. This is because hand washing has been seen to be one of the most cost-effective investments in public health as it stops the spread of infections and help check the spread of some other diseases which are very expensive for individuals as well as health care systems and nations as a whole to manage (Global Hand washing Partnership, 2017).

Research findings have also indicated that infections affect the health of children and lead to missed educational opportunities that may have negative impact on educational outcomes (Department for Education, 2015; Public Health England, 2014). So hand washing with soap and water is a good practice to ensure the health and safety of children in ECCD centres. The health and safety of children at ECCD centres is very important as these children spend hours each day at the centres. What the centre and its staff do

in taking care of these little ones play a great role in influencing their health and safety as well as their cognitive development. American Academy of Pediatrics (2011), reiterated that following health and safety best practices is an important way to provide quality early care and education for children.

Discussion of Results on Centre Auspices associated with Quality of the Physical Environment of ECCD centres and Health and Safety Practices

The findings of this study revealed that centre type (private or public) was not associated with quality of the physical environment of these centres. There was no significant difference between private and public ECCD centres in terms of the quality of their physical environment. Centre type (private or public) however had significant association with some of the health and safety practices of the ECCD centres. The results indicated that private ECCD centres in the Cape Coast Metropolis as well as teachers in these private ECCD centres were likely to meet the recommended health and safety practices compared to public centres.

The reason for these results may be due to the fact that private ECCD centres were better resourced to meet the recommended health and safety practices than the public ECCD centres. A confirmation of this assertion is the results of a quantitative comparative study conducted by Siakwa and Offie (2016) in the Suhum Municipality of Ghana which revealed that despite the fact that both public and private ECCD centres had inadequate resources for infection prevention, there was a statistically significant difference in resource availability to private teachers and public teachers. This resulted in better practice of infection prevention among teachers in private centres compared to teachers in the public centres.

The results of the current study is similar to a study in Istanbul which used a randomly selected sample of public and private ECCD centres to evaluate the quality of ECCD classrooms and found that the private sector handles daily routines more effectively even though both types of centres had significant shortcomings ranging from physical infrastructure to teacher-pupil interactions (Göl-Güven, 2009). The private sector has played an important role in increasing access to ECCD education in Ghana, especially in urban areas and parents know of almost four ECCD centres within a walking distance from their home (Bidwell *et al.*, 2014).

According to Akyeampong *et al.* (2012), evidence suggests that quality in public schools were becoming a concern and that even poor households were disillusioned with public education and were rather opting for private schools which were relatively costly compared with the public schools in Ghana. The follow-up interviews of this current study also revealed that most of the ECCD Heads and teachers agreed that private ECCD centres in the Cape Coast Metropolis were better in meeting the health and safety standards than public ECCD centres. This they explained by indicating that because the private centres are in business to make profit, they make efforts to put up nice facilities and ensure that the health and safety needs of children in their care are taken care of.

But with the public ECCD centres because it is managed by government, everything depends on the government and if it has not gotten to your turn to have a piece of the 'national cake', then the centre will not have the things they require. This finding is similar to an observation made by Haskins and Barnett (2010) that there has been argument in the U.S. that government-

funded ECCD programmes such as childcare centres, Head Start and statefunded prekindergarten provided services that were of 'mediocre or worse' quality. In the case of Ghana, the Ministry of Education (2013) acknowledged that large class sizes, coupled with small classroom sizes which only gave little support for varied indoor and outdoor learning environments made it difficult for teachers in public ECCD schools to assess the progress of each individual child. This implied that the teachers could not possibly meet the health and safety needs of these children under their care.

The ECCD Heads and teachers also indicated in the interviews in the current study that parents in private ECCD centres were more responsible than parents who have their children in public ECCD centres. They explained that parents who had their children in private centres were willing to pay and provide everything the centre required to ensure that the children were healthy and safe but this is not the case with public centres. This finding is similar to what was found in a study in eastern region of Ghana where a higher number of the public school teachers in rural communities explained that they could not attend to children who soiled themselves with faeces and urine but rather had to let the children go home for them to be cleaned up because parents were not buying toiletries such as detergents, antiseptic, soaps and tissues like parents in urban centres which was mandatory for them to buy (Siakwa & Offie, 2016).

This raises a question of whose responsibility it is to provide resources to ensure health and safety practices and who bears the cost. In the year 2008, Ghana enacted the Education Act, which added formally two years of kindergarten education to the Free Compulsory Universal Basic Education

(fCUBE) structure (Bidwell *et al.*, 2014). This meant that children in public ECCD centres were to go to school free and it was expected by parents that government was to provide all the things needed to ensure that the children were safe and healthy. One will not probably be fair if parents with children in public ECCD centres are branded as irresponsible because they are not willing to buy toiletries for their children who are attending free schools, unless it has been explained to parents what their responsibilities are when it comes to ensuring the health and safety of the children in these ECCD centres.

The implication of the findings of this current study for best practice is that more attention need to be paid to public ECCD centres in the Cape Coast Metropolis as well as the teachers especially through supervision and provision of needed facilities to ensure that all recommended health and safety standards are met at all ECCD centres. Other than that children in public ECCD centres will be at a higher risk of infections and or injuries.

Discussion of Results on Teacher Characteristics associated with Health and Safety Practices

The findings of this study revealed that when it comes to the teacher NOBIS characteristics that looked at specialized training in ECCD, with an exception of one, there was generally no statistical significant association between specialized training in ECCD and most of the health and safety practices of the teachers. The reason for this result is that probably all the teachers have received some on the job training on things to do to ensure the health and safety of children. The result of this study is similar to a study conducted in the Greater Accra Region of Ghana by Nyarko and Addo (2013), aimed at finding out the effects of level of education and years of experience of

teachers on their interactions with children in early childhood institutions and found no statistically significant difference between the teachers' level of education and years of experience on the interaction scores.

The finding of the current study can also be explained in line with an assertion made by several researchers that, the nature of training of teachers when it comes to especially children under two years usually differs by countries, states, cultures and statutes which supports specific thresholds or benchmarks to determine what constitutes quality (Munton *et al.*, 2002; Tout *et al.*, 2005; Pessanha, *et al.*, 2007 as cited by Dalli *et al.*, 2011). Dalli *et al.* (2011) further indicated that the weight of evidence suggests that the sheer complexity of early years' environments makes it difficult for research to identify independent effects of individual elements including qualifications and group size.

Another reason that can also be attributed to the finding of this current study is the fact that most of the ECCD teachers involved in the study were females. Nyarko and Addo (2013), an observed in their study that probably our way of socialization in Ghana where older siblings are made to care for younger ones perhaps had prepared these teachers to be nurturing in nature regardless of level of education or experience and in the case of this current study, specialization in ECCD. The follow-up interviews of this current study also found the both ECCD Heads and teachers saying that even though specialization in ECCD is important, it is not the most important thing needed.

For the ECCD Heads and teachers, what is needed for a teacher to be able to take good care of the children was for the teacher to have a desire to care for children, have a special 'calling from God' to do that work and also have

the skill of caring for children. The implication of this finding for best practice is that even though the current study did not find any significant difference, there are a number of studies including correlational studies that have found that specialized training is a significant and strong predictor of sensitive and stimulating teacher-child interactions as well as global quality ratings (Fukkink & Lont, 2007).

This is confirmed by research showing that specialized knowledge of young children's development (rather than education alone) helps practitioners to be more attuned in their interactions with infants and toddlers Melhuish, 2004). It is therefore important that ECCD teachers in Cape Coast Metropolis are encouraged to enroll in specialized ECCD programmes. The findings of this current study further revealed that when it comes to the teacher characteristics that looked at teacher-to-child ratio by health and safety practices, only two out of the eleven health and safety practices, showed a significant relationship.

However it was rather teachers in classrooms with high teacher-to-child ratio that were more likely to meet the standard of encouraging children to try new foods and also more likely to meet the standard of actively supervising children who can feed themselves and also be at an arm's reach of the feeding table. The reason for this result is that probably teachers did not give individual children this attention but rather supervised from a far to see almost everyone and also perhaps gave verbal encouragement to the children to try new food considering the fact that they were handling large classes.

The results of this study is not consistent with studies in the literature which has provided strong and favourable evidence for adult-child ratio by

indicating that fewer children per teacher promote better adult-child interaction such as reduced restrictiveness responsiveness, stimulation, availability among others and is also associated with better outcomes for children, including cognitive and behavioral development, health and attachment security (Dalli *et al.*, 2011; Elfer & Page, 2013; Huntsman, 2008; Phillips & Lowenstein, 2011).

Dalli *et al.* (2011) also pointed out that caregivers provided more sensitive, frequent, and positive care when they were responsible for fewer children and that the most consistent predictor of observed positive care giving in group-based early childhood settings has been found to be adult-child ratios. Another study in England indicated that ratios for children aged below three is linked to quality care routines as well as meeting individual needs of the children (Mathers *et al.*, 2011). A study by OECD (2012) found that when there are fewer children per teacher, there is less stress on the teachers and they can have regular and meaningful interactions with the children.

There is also evidence from correlational studies in OECD countries showing an association between lower adult to child ratios and improved quality including less stress for teachers, improved interaction and healthier child development (Neuman *et al.* 2015). The implication of the current study findings for best practice is that high teacher to children ratios do not help teachers in meeting recommended health and safety standards and according to Janta *et al.* (2016), if ECCD centres want to follow and maintain safety standards then ensuring that the centres have a maximum number of children per a teacher is a good thing to do.

Chapter Summary

In this chapter I have presented the results of the study based on the five research questions that guided the study. I presented both the quantitative and qualitative findings and discussed them indicating where the findings sit in literature by showing how different or similar the findings were compared to other studies. Implications for best practices were also discussed in this chapter. Chapter Five presents the summary, conclusions, and recommendations of the study.



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CHAPTER FIVE

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this explanatory sequential mixed methods study was to assess the health and safety conditions of Early Childhood Care and Development (ECCD) centres in the Cape Coast Metropolis of Ghana and to identify the determinants of these health and safety conditions. In this final chapter, I present the overview of the research process, key findings of the study, conclusions, recommendations and suggestions for further studies.

Summary of the Research Process

Overview of the study

To achieve the purpose of this study, five research questions were explored:

- 1. What is the quality of the physical environment of ECCD centres in Cape Coast Metropolis?
- 2. What are the health and safety practices of ECCD centres in Cape Coast Metropolis? NOBIS
- 3. To what extent are centre characteristics (auspice status of the centre whether public or private) associated with quality of the physical environment of ECCD centres and health and safety practices in ECCD centres in Cape Coast Metropolis?
- 4. To what extent are teacher characteristics (specialized training in ECCD and teacher-to-child ratios) associated with health and safety practices in ECCD centres in Cape Coast metropolis?

5. How does the qualitative follow-up data help to better understand the quantitative results?

In answering these research questions, explanatory sequential mixed methods design was adopted. This design involved first, the collection of quantitative data and then a collection of qualitative data to help explain the quantitative results (Creswell, 2012). For the first phase (quantitative) of this study data was collected from all the 160 ECCD centres, all 160 ECCD centre Heads and all 462 ECCD teachers in the Cape Coast Metropolis of Ghana. Sixteen respondents were also interviewed in the second phase of the study. Participants in the study included both male and female Heads and teachers in the ECCD centres.

Using a physical environment observational instrument, questionnaires and semi-structured interviews, data were collected. SPSS version 21 was used to analyse the observational and questionnaires data. Interview data were transcribed verbatim, sorted, coded, and managed both manually and electronically. Computer assisted qualitative data analysis software, NVivo 11 Plus, was used to isolate themes into relevant categories. Themeing data and in-vivo coding strategies were used for the data analysis. Ethical conduct of the study, validity and trustworthiness of results were ensured.

Key findings

The study revealed that first the physical environment of ECCD centres in the Cape Coast Metropolis was of a fair quality. The location and site of centres in the Cape Coast Metropolis was also rated as being good. However the ECCD centres had more children than the capacities of the centres. The play yards of the centres also did not meet the functional and developmental

needs of the children. Two themes identified as explanations to why play yards in ECCD centres were not good were: "Funds" and "Government". The ECCD Heads indicated that the challenge with getting enough equipment for children to play with had to do with funds (money) and some indicated that it was government's responsibility to provide playing equipment for the children.

Secondly the findings of this study revealed that most of the ECCD centres in the Cape Coast Metropolis, as well as teachers in these centres met majority of the recommended health and safety standards. However, when it comes to the recommended standard that centres should require and keep copies of doctor's notes or permissions for children who are out due to illness, more than half of the ECCD centres in the Metropolis failed to meet the standard. The theme identified as an explanation to why centres did not meet this standard was: "We don't bother to ask". ECCD centre Heads did not see it as their responsibility to require doctor's report from a child who was absent from school due to illness. All that they were expecting is for the parent to bring to school a healthy child.

The results also showed that when it comes to the recommended standard of alcohol-based sanitizers to be used as an alternative to handwashing with soap and water, if hands are not visibily soiled, half of the ECCD teachers in the Metropolis failed to meet the standard. Four themes identified as an explanations to why teachers did not meet this standard were: "Water and soap", "Expensive", "Teachers Have" and "Some Children Have". Even though some teachers and children had their personal hand sanitizers, the hand sanitizer was considered to be expensive compared to soap and water. Soap

ECCD centres practiced hand washing with soap and water more than the use of hand sanitizer.

Thirdly, the test of association results indicated that type of centre auspices was not statistically associated with the quality of the physical environment of the centre. There was therefore no significant difference between private and public ECCD centres when it comes to the quality of their physical environment. However, centre auspices were found to be associated with recommended health and safety practices. Private ECCD centres and their teachers were likely to meet the recommended health and safety practices compared to public ECCD centres and their teachers. Both ECCD Heads and teachers indicated in the follow-up interview that most of the time private was better compared to public ECCD centres.

In explaining why they responded that way, four themes came up: "National Cake", "For Profit", Nice Facility" and "Responsible Parents". They explained that because private centres are in for profit, they ensure that their facilities are nice and besides they have parents who are responsible. These parents are willing to pay and provide everything required from the private ECCD centre to ensure that the health and safety needs of the children are met. But for the public ECCD centres, because they rely solely on government, they have to wait until the resources gets to their turn which affects the quality of their physical environment as well as some of the health and safety practices.

Finally, the results showed that specialized training in ECCD was found to be associated with the practice of ensuring that pest breeding areas were not on site. Teachers without specialized training in ECCD were rather more likely

to meet the standard of ensuring that pest breeding areas were not on site. Teacher-to-child ratio was also found to be associated with encouraging children to try new foods and the practice of teachers actively supervising children who can feed themselves and also being at an arm's reach of the feeding table. But generally there was no significant association between teacher characteristics and their health and safety practices. In the follow-up interview, most ECCD Heads and teachers indicated that it is not necessarily the qualification of ECCD teachers that determines if they will take good care of the children. In explaining why they responded that way, three themes came up: "Desire", "A Calling" and "Skill".

It was found that as much as ECCD centre Heads and teachers believed that having qualification is necessary, when it comes to taking good care of children, it takes more than just having the qualification but that the person should have the desire, the call from God and the skill to handle children.

Conclusions

This explanatory sequential mixed methods study has provided valuable insights into the health and safety conditions of ECCD centres in the Cape Coast Metropolis of Ghana. Quality of the physical environment of ECCD centres in the Cape Coast Metropolis is not the best and so children at these centres are at a risk of not having positive development. The children are at a risk of poor respiratory health, meningitis infection, meningococcal disease and childhood tuberculosis. The tendency of the children in these ECCD centres not being physically active is also high.

ECCD centres in the Cape Coast Metropolis may be reducing the spread of infections by practicing hand washing with soap and water. However these

centres may not be able to help accommodate as quickly as possible certain health care needs of the children because they are not previewed to a doctor's report of previous illness. The tendency of public ECCD centres not meeting health and safety needs of the children in their care may be high. Teachers or caregivers in ECCD centres with the skill of taking care of children may be able to ensure the health and safety of the children.

Teachers in classes with high teacher-to-child ratio have the tendency of not meeting the health and safety needs of the children. At the end of the study, the determinant of health and safety conditions of ECCD centres in Cape Coast Metropolis was centre auspices. This is illustrated in Figure 20. Centre auspices: that is whether the ECCD centre in the Cape Coast Metropolis is public or private will determine the health and safety conditions there.





I believe this study has provided a detailed picture of the health and safety conditions of ECCD centres in the Cape Coast Metropolis and has shown clearly where improvents are needed. This study has also provided explanations to the challenges facing these centres in terms of meeting recommended health and safety practices. This has given a better understanding of the the problem as well as areas to tackle in order to solve the problem.

Implications of the study

The implications of this study to policy is that policy makers need to establish a standard physical environment structure plan for all ECCD centres. For Ghana Education Service, Social Welfare and employers, there is a need to enforce the regulations for operating ECCD centres, reduce teacher-to-child ratios and provide the needed facilities to ensure the health and safety of children in the centres. For the care givers or teachers, they should continue hand washing with soap and water as it helps reduce the spread of infections in ECCD centres and also make efforts to acquire the skill and desire of taking care of children.

Recommendations

The following recommendations based on the findings of the study, were made as follows:

- 1. The Cape Coast Metropolitan Education Service and the Social Welfare Department must establish or adopt a standard physical environment structure plan for all ECCD centres and enforce the regulations for operating an ECCD centre in the Metropolis. This will help ensure that all ECCD centres have a common standard of high quality physical environment structure to follow.
- 2. Early Childhood Care and Development centres in the Cape Coast Metropolis must require and keep doctor's report of children who would be absent from school due to illness. ECCD centres are also encouraged to keep on practicing hand washing with soap and water.
- 3. The Cape Coast Metropolitan Education Service must pay attention to public ECCD centres in the Cape Coast Metropolis as well as the

teachers through supervision and provision of needed facilities to ensure that all recommended health and safety standards are met at all ECCD centres.

4. Early Childhood Care and Development centres must encourage their teachers to acquire skills of caring for children through training courses in ECCD. They must also ensure that there are fewer children per teacher in a class so that the children's individual health and safety needs can be met by the teacher.

Suggestions for Further Research

The following suggestions were made for future research to be conducted.

- 1. To have broader data base, studies on the health and safety conditions of ECCD centres should be conducted in the central region as well as all the other regions in Ghana.
- Research should be conducted on the perspectives of parents on the health and safety conditions of ECCD centres in the Cape Coast Metropolis of Ghana.
- 3. Childhood studies should be conducted on how children perceive an ideal ECCD centre to be.

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APPENDIX A

THE CHILDREN'S PHYSICAL ENVIRONMENTS RATING SCALE

Name of Building

Address

PART A: Planning

(Center Size And Modules/Classrooms)

1.1 The Building size of the centre: Length _____ Breadth _____

1.2 Useable indoor activity area of the center: Length _____ Breadth _____

1.3 How many modules/classrooms does the centre have?

If the centre is *not* divided into modules, the below questions 1.4 to 1.6 <u>do not</u> apply; please check "NA" for questions 1.4 to 1.6.

| | Not Met | et Fully N | | |
|---|---------|------------|-----|---|
| | 0 1 | 2 | 3 4 | |
| 1.4 Each module has its own entry | | | | - |
| 1.5 Each module has its own separate play yard. | 199 | | | |
| 1.6 When approaching the center, modules can be easily identified as separate sections of the building | 5 | | | |

Section B: Building as aWhole

| Subscale 2. Image And Scale | _ | _ | - | | | |
|---|-----|----|----|-----------|---|---|
| | Not | Me | et | Fully Met | | |
| | | 0 | 1 | 2 | 3 | 4 |
| 2.1 The exterior of the center appears non- institutional | | | | | | |
| 2.2 Children can see some indoor children's activit areas from outside before entering the center. | ly | | | | | |
| 2.3 The scale of the interior appears small and Cozy. (e.g., low windows that children can see, low | | | | | |
|---|-------|-----|----------|--------|---|
| openings between adjoining spaces, etc). | | | | | |
| 2.4 The interior finishes appear welcoming and natural (e.g., use of carpet, warm colors, soft lighting, curtains, etc). | | | | | |
| 2.5 Furniture is child height (e.g., bookcases, display shelves, tables, chairs, etc). | | | | | |
| 2.6 Toilets, basins and mirrors used by children are child- height. | | | | | |
| Subscale 3. Circulation | | | | | <u>ــــــــــــــــــــــــــــــــــــ</u> |
| | Not N | Aet | F | ully I | Met |
| | 0 | 1 | 2 | 3 | 4 |
| 3.1 When entering the center, children can easily identify the circulation paths to the main indoor activity areas. | | | | | |
| 3.2 Children can easily identify circulation paths within activity areas. | | | | | |
| 3.3 Circulation paths within activity areas do not interfere with children's activities. | 7 | 9 | | | |
| 3.4 While moving between activities, children can see into or "preview" other activities before engaging in them. | | 5 | | | |
| 3.5 Doors that are intended to be used by children are easy to open (e.g., low handle height and lightweight, etc). | 1011 | | | | |
| 3.6 Circulation paths inside the center are able to accommodate wheelchairs, prams and persons on crutches. | | | | | |
| Subscale 4. Common Core Of Shared Facilities | 3 | | . | -4 | |
| 4.1 The center has an administration office, with adequate space and storage. | | | | | |
| 4.2 The center has a reception/waiting area with seating and adequate space for several strollers or prams. | | | | | |
| 4.3The center has a staff lounge, where staff can have informal breaks or lunches, share information and store personal belongings. | | | | | |

| 4.4 The center has one or more rooms allocated | — | | | | |
|---|--------|-------|------|--------|------|
| for small meetings, teacher preparation | | | | | |
| and/or parent-teacher conferences | ĺ | | | | |
| 4.5 The center has staff/adult hathrooms which | | | | | |
| are also accessible for disabled people. | | | | | |
| 4.6 The center has a separate lockable laundry room. | | | | | |
| 4.7 The center has a kitchen, which is visually connected to children's activity areas. | | | | | |
| 4.8 The center has an indoor multipurpose active playroom or gym, with enough space to accommodate slides, tunnels, space for ball play or to ride small push tows | | | | | |
| 4.9 The center has a space allocated as a back, and | | | | | |
| toy lending library. | | | | | |
| Answer the following in terms of the arranger | ment c | f the | abov | ve spa | ces. |
| th th | Not | Met | Fı | lly N | let |
| | 0 | 1 | 2 | 3 | 4 |
| 4.10 The above facilities are grouped together into one location in the building. | 7 | 9 | | | |
| 4.11 The above facilities are separate from children's activity areas so that they are not accessible to children (e.g., separate area, doors, barriers, etc). | INT | 5 | | | |
| 4.12 The above facilities are located near the center of the building easily accessible for all staff. | | | | | |
| Subscale 5. Indoor Environmental Quality | | | | | |
| 5.1 The temperature of the indoor environment can be manipulated by staff to keep it at a pleasant level (e.g., fans, windows, or air conditioning). 5.2 Children's spaces have a plenty of natural light. | | | | | |
| 5.3 The artificial lighting at the center provides sufficient lightfor children's and can be adjusted by staff. | | | | | |
| 5.4 The area(s) children sleep in can be darkened to an appropriate light level so children can sleep | | | | | |

| | | | | | _ |
|--|-----------------|---|----------|----------|---|
| 5.5 To dampen undesirable sound transfer, the | | | | | |
| interior is scovered with soft materials (e.g., | | | | | |
| carpet, curtains, acoustic ceiling tiles textured | | | | | |
| Walls hangings, etc) | | | <u> </u> | | |
| with fly compared windows throughout the center are fitted | | | | | |
| with hy screens (e.g., children's areas, | | | | | |
| 5.7 The center is designed to be a | | | | | |
| fresh air | | | | | |
| | | | | | |
| 5.8 Bathrooms and kitchens have both natural and | | | | -+ | |
| mechanical ventilation. | | | | | |
| Subscale 6 Safety And Security | | | | | |
| Subscale 0. Safety And Security | | | | - | |
| | Not Met Fully M | | | Met | |
| | | , | 2 | 2 | 4 |
| | 0 | 1 | 2 | د | 4 |
| 6.1 Entrances have a security measure to prevent | | | | | |
| intruders from entering (e.g., locked gate or door | | | | | |
| with intercom release, etc). | | | | | |
| 6.2 Entrance(s) to the center and or building are | | | | | |
| within view of an office (eg, at least the building | | | | | |
| door within view of an office, and perhaps the | | | | | |
| gate to the site). | | | | | |
| 6.3 Staircases are not accessible to unaccompanied | | | | | |
| children. | | | | | |
| 6.4 Indoor stairs and ramps are safe for children | | | | | |
| (e.g., child-height handrails, easy gradient, etc). | 10 | | | | |
| | | _ | - | <u> </u> | |
| 6.5 In children's spaces, people are able to see | | | | | |
| a child behind doors before opening them (e.g., | | | | | |
| door with glass panes, etc). | | | | | |
| 6.6 Children are protected from hot equipment and | | | | | |
| moving parts (e.g., stoves, hot water heaters, | | | | | |
| fans, etc) by being out of reach or by doors, | | | 1 | i i | |
| | 1 | | | 1 | |

Section C: Children's Indoor Spaces

| Subscale 7. Modified Open-Plan Space | | | | | |
|---|---------|---|-----------|---|-----|
| | Not Met | | Fully Met | | 1et |
| | 0 | 1 | 2 | 3 | 4 |
| 7.1 Children's activity areas are partially enclosed to provide protection from visual and noise distractions | | | | | |

| 7.2 Children's activity areas can be easily modified to change activities from week to week (e.g., few or no permanent walls, but partitions or furnishings are easily moved). 7.3 Children in one activity area can see other activities within the same module 7.4 Spaces for noisy activities (e.g., gross-motor play, dramatic play, music) are separated from spaces for quiet activities (e.g., gross-motor play, dramatic play, music) are separated | | | | | | |
|---|-----------------|-------------------|-----------------|-------------|----------|--|
| 7.5 Spaces for messy activities (e.g., reading). 7.5 Spaces for messy activities (e.g., arts and crafts, water play) are separated from spaces for clean activities (e.g., reading, computers). (Does not apply to infants'modules). | | | | | | |
| 7.6 Indoor children's spaces are spatially and visually connected with outdoor play areas. | | | | | | |
| Subscale 8. Home Bases | 2 | | | 1 | | |
| | Not 0 | : Met 1 | F 1 2 | ully N 3 | 1et 4 | |
| 8.1 The center (or module being evaluated) has a well-defined area for individual lockers or cubbies for each child's personal belongings. 8.2 The center or module has an area clearly intended for eating (eg, a cluster of tables) | | | | | | |
| 8.3 The center or module has a quiet sleeping area separate from children's play areas | | 8 | | | | |
| 8.4 If the center or module serves infants and younger toddlers, it has a diapering area from which staff can see activity areas 8.5 If the center or module serves toddlers or children, in the process of becoming toilet-trained, it has toilets that are not closed or isolated but that are visually and spatially connected to other indoor children's activity areas. | LUN | | | | | |
| 8.6 If the center or module serves toddlers or children already toilet-trained, it has a toilet area that is closed and architecturally separated from other indoor children's activity areas (eg.by walls not by distance). Answer the following in terms of the <i>arrangement</i> or the context of the context o | f the | above | e spac | res. | | |
| a 7 The above facilities are grouped together into | | | | | | |

| 8.8 The above facilities are adjacent and visually connected to children's indoor spaces. | | | |
|---|----|--------|-----|
| Subscale 9. Physical Activity Areas | L | | |
| Physical (Gross Motor) Play Area | No | Shared | Yes |
| | 0 | 2 | 4 |
| 9.1 The center has an indoor physical play area for infants (e.g., large toys, crawling levels, etc). | | | |
| 9.2 The center or module has an indoor physical play area for toddlers. | | | |
| 9.3 The center or module has an indoor physical play area for preschoolers | | | |
| 9.4.The physical play area is spatially separated from other (non-shared) activity areas. | | | |
| 9.5 The physical play area is appropriate for a range of gross-motor physical activities. | : | | |

Section D: Outdoor Areas

| Subscale 10. Play Yards – Functional Needs | | | | | | | | | |
|---|-----|---------------|---|---|-----|--|--|--|--|
| 10.1 The total area of useable outdoor play yards: Length Breath | | | | | | | | | |
| | Not | Not Met Fully | | | Iet | | | | |
| ATTRA C | 0 | 1 | 2 | 3 | 4 | | | | |
| 10.2 The play yards have both sunny and shady areas. | | | | | | | | | |
| 10.3 The play yards allow mobility for children using wheelchairs or crutches (e.g., wide and hard path,smooth ground surfaces, gentle slopes and ramps, etc). | | | | | | | | | |
| 10.4 Some of the play yard is open and largely flat | | | | | | | | | |
| 10.5 There is a large accessible storage room for outdoor play equipment. | | | | | | | | | |
| 10.6 There is a sandpit with a partial shade cover | | | | | | | | | |
| 10.7 There are roofed outdoor areas that protect children's activities in most local weather conditions (e.g.,heat, rain, etc). | | | | | | | | | |

| Subscale 11. Play Yards – Developmental Needs | | | | | |
|--|-----|-----|-----|------|-----|
| 11.1 The play yard(s) provides enough diversity | | | | 1 | 1 |
| such as avariety of surfaces for different | | | | | |
| types of play, to beinteresting for children | | | | | |
| (e.g., grass, hard surfaces, sand, etc). | | | | | |
| 11.2 The play yards have both large and small areas | | | | | |
| for children to play. | | | | | |
| 11.3 The play yards have space for social and | | | • | - | |
| fantasy play(e.g. quiet areas away from physical | | | | | |
| play, cubby house, outdoor playhouse, storage | | | | | |
| for dress up props, etc). | | | | | |
| 11.4 Some of the play yards are smaller and have | | | | 1 | |
| a friendly feeling (e.g., intimate character, | | | | | |
| natural elements, etc). | 1 | | | | |
| 11.5Some of the play yards contain contours that are | 2 | | | | |
| safe yet challenging enough for children to play | 7 | | | | |
| on. | | | | | |
| 11.6 Secret or retreat places exist for a child to take | | | | | |
| time to be alone yet within sight of adults. | | | | | |
| 11.7 There is a garden that children help to maintain | | | · · | | |
| (Ask the director if necessary.) | | | | | |
| | | | | | |
| 11.8 There is an identifiable area for outdoor water | 7 | | | | |
| play (e.g.,outdoor water table, tap, sprinkler, | | 2 | | | |
| natural ponds, etc). | | | | | |
| Subscale 12. Location and Site | | | | | |
| | Not | Met | F | ully | Met |
| | 0 | 1 | 2 | 3 | Λ |
| NOBIS | U | 1 | 2 | 5 | 4 |
| 12.1 The location of the center is clearly visible to | | | | | |
| drivers and pedestrians as they approach. | 1 | ļ | | | |
| | | | | _ | |
| 12.2 The entrance(s) to the center are easy to find. | | | | | |
| | | | | | |
| 12.3 The site is sufficiently far away from noxious | | | | | |
| elements (e.g., heavy industry, manufacturing, | | | | | |
| high power tension wires, sources of pollution, | | | | 1 | |
| | 1 | | 1 | | |
| major arterial roads, air craft noise, etc) to be | | | | | |
| major arterial roads, air craft noise, etc) to be safe. | | | | | |
| major arterial roads, air craft noise, etc) to be safe. 12.4 The site is located within a short and safe walking distance of public transportation. | | | | | |

| 12.5 Parks and other natural features are within walking distance from the site. | | |
|---|--|--|
| 12.6 Children and adults have easy and safe access to the center from the parent parking area (e.g., they do not have to cross a driverway or road, etc). | | |
| 12.7 The center is easily accessible to wheelchairs and prams/strollers (e.g., no stops, etc). | | |
| 12.8 The site is adequately fenced so children cannot leave without knowledge of staff. | | |
| 12.9 The site has natural features such as trees, shrubs, and gentle slopes. | | |
| 12.10 The center is positioned on the site to let natural light into the building, while being from harsh sun. | | |
| 12.11 The center is positioned to buffer outdoor play areas from excessive noise. | | |



APPENDIX B

SPSS Reliability Test Outputs for CPERS

RELIABILITY

/VARIABLES=Onel One2 One3

/SCALE('ALL VARIABLES') ALL

/MODEL=ALPHA

/STATISTICS=DESCRIPTIVE SCALE CORR

/SUMMARY=TOTAL.

Reliability

[DataSet1] C:\Users\user\Desktop\My Threat Data\ECCD Physical Environments.sav

Scale: ALL VARIABLES

Case Processing Summary

| | | N | % |
|-------|-----------------------|-------------------|-------|
| Cases | Valid | 16 <mark>0</mark> | 100.0 |
| | Excluded ^a | 0 | 0 |
| | Total | 160 | 100.0 |

a. Listwise deletion based on all variables in the

procedure.

| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
|------------------|---|------------|
| .486 | .579 | 3 |

| | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item- Total Correlation | Squared Multiple Correlation | Cronbach's Alpha if Item Deleted |
|------|----------------------------------|--------------------------------------|--------------------------------------|------------------------------------|--|
| One1 | 3.48 | 1.936 | .452 | .578 | .137 |
| One2 | 3.56 | 2.298 | .500 | .577 | .174 |
| One3 | .36 | 2.107 | .099 | .010 | .848 |

Item-Total Statistics

RELIABILITY

/VARIABLES=Two1 Two2 Two3 Two4 Two5 Two6 /SCALE('ALL VARIABLES') ALL /MODEL=ALPHA /STATISTICS=DESCRIPTIVE SCALE CORR /SUMMARY=TOTAL.

| Re | liability Statistics | |
|------------------|----------------------|------------|
| Cronbach's Alpha | Cronbach's Alpha | N of Items |
| | Based on | |
| | Standardized | 6 3 |
| | Items | |
| | | |
| .886 | .888 | 6 |
| | | |

Item-Total Statistics

| | Scale Mean | Scale | Corrected Item- | Squared | Cronbach's |
|------|------------|--------------|-------------------|-------------|---------------|
| | if Item | Variance if | Total Correlation | Multiple | Alpha if Item |
| | Deleted | Item Deleted | | Correlation | Deleted |
| Two1 | 9.98 | 20.339 | .632 | .842 | .877 |
| Two2 | 12.18 | 23.130 | .154 | .067 | .949 |
| Two3 | 10.76 | 16.802 | .941 | .967 | .826 |
| Two4 | 10.97 | 16.898 | .815 | .944 | .846 |
| Two5 | 10.67 | 16.776 | .907 | .914 | .830 |
| Two6 | 10.51 | 17.019 | .880 | .940 | .835 |

RELIABILITY

/VARIABLES=Three1 Three2 Three3 Three4 Three5 Three6
/SCALE('ALL VARIABLES') ALL
/MODEL=ALPHA
/STATISTICS=DESCRIPTIVE SCALE CORR
/SUMMARY=TOTAL.

Reliability Statistics

| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items | |
|------------------|---|------------|---|
| .935 | .947 | 6 | 7 |

Item Statistics

| | Mean | Std. Deviation | N |
|--------|------|----------------|-----|
| Three1 | 2.16 | 1.037 | 160 |
| Three2 | 2.28 | .997 | 160 |
| Three3 | 2.48 | .777 | 160 |
| Three4 | 2.78 | .697 | 160 |
| Three5 | 2.03 | 1.168 | 160 |
| Three6 | 1.66 | 1.383 | 160 |
| | | | |

Item-Total Statistics

| Alpha if Item |
|---------------|
| Deleted |
| .928 |
| .908 |
| .918 |
| .938 |
| .906 |
| .938 |
| |

RELIABILITY

/VARIABLES=Fourl Four2 Four3 Four4 Four5 Four6 Four7 Four8 Four9 Four10 Four11 Four12

/SCALE('ALL VARIABLES') ALL

/MODEL=ALPHA

/STATISTICS=DESCRIPTIVE SCALE CORR

/SUMMARY=TOTAL.

| Re | liability Statistics | | |
|------------------|---|------------|---|
| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of items | |
| .962 | .956 | 12 | 3 |

Item-Total Statistics

| | Scale Mean if | Scale | Corrected Item- | Squared | Cronbach's |
|--------|---------------|-----------------------|-----------------|-------------|---------------|
| | Item Deleted | Variance if | Total | Multiple | Alpha if Item |
| | | Item Deleted | Correlation | Correlation | Deleted |
| Four1 | 16.237500 | 148.04 <mark>4</mark> | .815 | .851 | .960 |
| Four2 | 16.900000 | 133.726 | .936 | .922 | .955 |
| Four3 | 16.493750 | 141.849 | .944 | .939 | .956 |
| Four4 | 16.775000 | 135.157 | .946 | .956 | .955 |
| Four5 | 17.068750 | 132.014 | .950 | .941 | .955 |
| Four6 | 17.343750 | 135.258 | .845 | .728 | .958 |
| Four7 | 18.293750 | 162.989 | .242 | .237 | .970 |
| Four8 | 18.350000 | 164.065 | .232 | .133 | .970 |
| Four9 | 16.843750 | 135.189 | .936 | .939 | .955 |
| Four10 | 16.818750 | 135.734 | .931 | .925 | .955 |
| Four11 | 16.325000 | 145.579 | .861 | .882 | .958 |
| Four12 | 16.737500 | 137.792 | .903 | .904 | .956 |

RELIABILITY

/VARIABLES=Five1 Five2 Five3 Five4 Five5 Five6 Five7 Five8 /SCALE('ALL VARIABLES') ALL

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/MODEL=ALPHA

/STATISTICS=DESCRIPTIVE SCALE CORR

/SUMMARY=TOTAL.

Reliability Statistics

| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
|------------------|---|------------|
| .966 | .972 | 8 |

Item-Total Statistics

| | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item- Total Correlation | Squared Multiple Correlation | Cronbach's Alpha if Item Deleted |
|-------|----------------------------------|--------------------------------------|--------------------------------------|------------------------------------|--|
| Five1 | 14.42 | 63.542 | .953 | .926 | .957 |
| Five2 | 13.77 | 74.628 | .671 | .716 | .973 |
| Five3 | 14.56 | 62.789 | .818 | .790 | .965 |
| Five4 | 14.78 | 61.342 | .929 | .918 | .958 |
| Five5 | 15.08 | 57.064 | .974 | .964 | .956 |
| Five6 | 15.10 | 57.600 | NOB13961 | .948 | .957 |
| Five7 | 14.06 | 70.461 | .886 | .844 | .965 |
| Five8 | 14.47 | 64.993 | .943 | .897 | .958 |

RELIABILITY

/VARIABLES=Six1 Six2 Six3 Six4 Six5 Six6

/SCALE('ALL VARIABLES') ALL

/MODEL=ALPHA

/STATISTICS=DESCRIPTIVE SCALE CORR

/SUMMARY=TOTAL.

Reliability Statistics

| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
|------------------|---|------------|
| .891 | .908 | 6 |

Item-Total Statistics

| | Scale Mean | | Scale | Corrected Item- | Squared | Cronbach's |
|------|------------|------|-----------|-------------------|-------------|---------------|
| | if Item | Va | riance if | Total Correlation | Multiple | Alpha if Item |
| | Deleted | lten | Deleted | | Correlation | Deleted |
| Six1 | 11.79 | | 19.363 | .745 | .612 | .877 |
| Six2 | 11.07 | | 21.838 | .844 | .796 | .850 |
| Six3 | 10.60 | | 25.223 | .882 | .873 | .862 |
| Six4 | 10.89 | | 23.308 | .818 | .925 | .857 |
| Six5 | 11.11 | | 21.731 | .907 | .868 | .841 |
| Six6 | 10.21 | | 27.787 | .296 | .595 | .931 |

RELIABILITY

/VARIABLES=Seven1 Seven2 Seven3 Seven4 Seven5 Seven6

/SCALE('ALL VARIABLES') ALL

/MODEL=ALPHA

/STATISTICS=DESCRIPTIVE SCALE CORR

/SUMMARY=TOTAL.

| ach's Alpha N of Items |
|------------------------|
| and on |
| ased on |
| ndardized |
| Items |
| .962 6 |
| |

| | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item- Total Correlation | Squared Multiple Correlation | Cronbach's Alpha if Item Deleted |
|--------|----------------------------------|--------------------------------------|---|------------------------------------|--|
| Seven1 | 11.87 | 20.324 | .910 | .942 | .927 |
| Seven2 | 11.67 | 20.523 | .938 | .958 | .921 |
| Seven3 | 10.92 | 27.139 | .879 | .874 | .937 |
| Seven4 | 11.01 | 27.491 | .796 | .749 | .943 |
| Seven5 | 11.15 | 26.996 | .846 | .854 | .938 |
| Seven6 | 11.68 | 21.162 | .908 | .863 | .925 |

Item-Total Statistics

RELIABILITY

/VARIABLES=Eight1 Eight2 Eight3 Eight4 Eight5 Eight6 Eight7 Eight8

/SCALE('ALL VARIABLES') ALL

/MODEL=ALPHA

/STATISTICS=DESCRIPTIVE SCALE CORR

/SUMMARY=TOTAL.

| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
|------------------|---|------------|
| .982 | .986 | 8 |

| | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item- Total Correlation | Squared Multiple Correlation | Cronbach's Alpha if Item Deleted |
|--------|----------------------------------|--------------------------------------|--------------------------------------|------------------------------------|--|
| Eight1 | 13.24 | 76.962 | .888 | .919 | .983 |
| Eight2 | 13.76 | 69.377 | .930 | .960 | .980 |
| Eight3 | 13.54 | 72.464 | .984 | .986 | .977 |
| Eight4 | 13.99 | 66.774 | .967 | .952 | .979 |
| Eight5 | 13.51 | 73.321 | .959 | .953 | .979 |
| Eight6 | 13.23 | 77.245 | .894 | .905 | .983 |
| Eight7 | 13.84 | 68.150 | .940 | .920 | .980 |
| Eight8 | 13 .71 | 69.819 | .953 | .953 | .978 |

Item-Total Statistics

RELIABILITY

/VARIABLES=Nine1 Nine2 Nine3 Nine4 Nine5

/SCALE('ALL VARIABLES') ALL

/MODEL=ALPHA

/STATISTICS=DESCRIPTIVE SCALE CORR

/SUMMARY=TOTAL.

| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
|------------------|---|------------|
| .961 | .960 | 5 |

| | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item- Total Correlation | Squared Multiple Correlation | Cronbach's Alpha if Item Deleted |
|-------|----------------------------------|--------------------------------------|--------------------------------------|------------------------------------|--|
| Nine1 | 7.33 | 22.474 | .686 | .541 | .982 |
| Nine2 | 7.73 | 17.786 | .935 | .918 | .944 |
| Nine3 | 7.79 | 17.096 | .971 | .955 | .937 |
| Nine4 | 7.76 | 17.292 | .950 | .986 | .941 |
| Nine5 | 7.74 | 17.349 | .936 | .984 | .944 |

Item-Total Statistics

RELIABILITY

/VARIABLES=Ten1 Ten2 Ten3 Ten4 Ten5 Ten6 Ten7

/SCALE('ALL VARIABLES') ALL

/MODEL=ALPHA

/STATISTICS=DESCRIPTIVE SCALE CORR

/SUMMARY=TOTAL.

| Cronbach's Alpha | Cronbach's Alpha | N of Items |
|------------------|------------------|------------|
| | Based on | NOBIS |
| | Standardized | |
| | Items | |
| | | |
| .639 | .722 | 7 |

| | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item- Total Correlation | Squared Multiple Correlation | Cronbach's Alpha if Item Deleted |
|------|----------------------------------|--------------------------------------|--------------------------------------|------------------------------------|--|
| Ten1 | 8.73 | 11.886 | .196 | .075 | .717 |
| Ten2 | 8.45 | 12.689 | .709 | .623 | .519 |
| Ten3 | 7.89 | 14.641 | .477 | .714 | .590 |
| Ten4 | 7.60 | 13.223 | .670 | .782 | .538 |
| Ten5 | 8.86 | 10.199 | .447 | .635 | .578 |
| Ten6 | 10.23 | 16.921 | .088 | .202 | .653 |
| Ten7 | 10.05 | 14.664 | .338 | .362 | .609 |

Item-Total Statistics

RELIABILITY

/VARIABLES=Eleven1 Eleven2 Eleven3 Eleven4 Eleven5 Eleven6 Eleven7 Eleven8

/SCALE('ALL VARIABLES') ALL

/MODEL=ALPHA

/STATISTICS=DESCRIPTIVE SCALE CORR

/SUMMARY=TOTAL.

NOBIS

| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
|------------------|---|------------|
| .915 | .912 | 8 |

| | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item- Total Correlation | Squared Multiple Correlation | Cronbach's Alpha if Item Deleted |
|---------|----------------------------------|--------------------------------------|---|------------------------------------|--|
| Eleven1 | 9.07 | 34.492 | .917 | .887 | .885 |
| Eleven2 | 8.56 | 38.311 | .895 | .923 | .892 |
| Eleven3 | 8.60 | 38.958 | .881 | .896 | .894 |
| Eleven4 | 8.91 | 34.450 | .884 | .862 | .889 |
| Eleven5 | 9.38 | 34.665 | .795 | .701 | .898 |
| Eleven6 | 9.58 | 33.578 | .775 | .652 | .903 |
| Eleven7 | 10.52 | 46.151 | .330 | .612 | .928 |
| Eleven8 | 10.55 | 46.211 | .346 | .612 | .927 |

Item-Total Statistics

RELIABILITY

/VARIABLES=Twelve1 Twelve2 Twelve3 Twelve4 Twelve5 Twelve6 Twelve7 Twelve8 Twelve9 Twelve10 Twelve11

/SCALE('ALL VARIABLES') ALL

/MODEL=ALPHA

/STATISTICS=DESCRIPTIVE SCALE CORR

/SUMMARY=TOTAL.

| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
|------------------|---|------------|
| .811 | .859 | 11 |

| | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item- Total Correlation | Squared Multiple Correlation | Cronbach's Alpha if Item Deleted |
|----------|----------------------------------|--------------------------------------|---|------------------------------------|--|
| Twelve1 | 23.31 | 31.698 | .217 | .649 | .815 |
| Twelve2 | 23.71 | 29.630 | .731 | .748 | .788 |
| Twelve3 | 23.46 | 30.376 | .502 | .557 | .798 |
| Twelve4 | 23.81 | 29.579 | .548 | .456 | .793 |
| Twelve5 | 26.46 | 30.690 | .230 | .206 | .818 |
| Twelve6 | 23.77 | 29.185 | .684 | .685 | .787 |
| Twelve7 | 24.44 | 29.254 | .518 | .388 | .794 |
| Twelve8 | 25.49 | 22.390 | .510 | .348 | .819 |
| Twelve9 | 25.58 | 24.850 | .588 | .425 | .784 |
| Twelve10 | 23 .82 | 28.8 <mark>16</mark> | .657 | .640 | .786 |
| Twelve11 | 24.48 | 24.880 | .700 | .714 | .769 |

Item-Total Statistics

APPENDIX C

UNIVERSITY OF CAPE COAST DEPARTMENT OF HEALTH, PHYSICAL EDUCATION AND RECREATION CENTRE QUESTIONNAIRE

Introduction

This is a data collection instrument designed by a student of the College of Education Studies (Department of Health, Physical Education and Recreation) at the University of Cape Coast who is interested in learning about your centre: the children enrolled, its staffing and the centre's health and safety practices. This research is in partial fulfillment of the requirement for the award of Doctor of Philosophy in Health Promotion.

This survey is to be completed only by the centre Director/Head teacher, the owner or operator, or the senior person in the role of director in the centre. All responses provided will be used strictly for academic purposes. Your contribution will be greatly appreciated. Please for further enquiries you can contact the researcher Salome Amissah-Essel on 0246762533.

Section A. Background Information

Please tick ($\sqrt{}$) the appropriate responses.

- 1. Is the centre: Public (Government) or Private
- 2. How many children are currently enrolled in the centre in each of the class

below?

| Crèche | Nursery | Kindergarten |
|--------|---------|--------------|
|--------|---------|--------------|

3. What is the total number of teaching staff at the centre?

Males _____ Females _____

- 4. How many teachers have at least a two-year post-secondary diploma or certificate in early childhood education?
- 5. Has the centre had any Early Childhood Education (ECE) or child care

practicum students on placement in the past year? No 🗌 Yes 🗌

If yes how many? _____

256

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Section B. Health and Safety Practices

The items in this section are indicators of practices to ensure health and safety in the child care centre. Please tick ($\sqrt{}$) the option applicable.

| 6. | Does the centre have health and safety policies? | No | | Yes 🗌 |
|----|---|---------|---------|---------------|
| 7. | Children's immunization records are all up-to-date. | No | | Yes 🗌 |
| 8. | Records on children who become sick at the centre a | ire kej | ot, the | ir symptoms |
| | are noted and parents are notified. | No | | Yes 🗆 |
| 9. | The centre requires and keep copies of doctor's note | es or | permi | ssions for |
| | children who were out due to illness to return to the | centr | e whe | n they are |
| | well. No 🗌 Yes 🗖 | | | |
| 10 | . Situations or times that children and staff should pe | erforn | n hand | l washing are |
| | posted at vantage areas. No 🗌 Y | es [| | |
| | | | | |

Thank you very much for completing this questionnaire.

APPENDIX D

UNIVERSITY OF CAPE COAST

DEPARTMENT OF HEALTH, PHYSICAL EDUCATION AND RECREATION

HEALTH AND SAFETY PRACTICES QUESTIONNAIRE FOR ECCD TEACHERS

Introduction

This is a data collection instrument designed by a student of the College of Education Studies (Department of Health, Physical Education and Recreation) at the University of Cape Coast to assess the health and safety practices of Early Childhood Development Centres in Cape Coast. This research is in partial fulfilment of the requirement for the award of a Doctor of Philosophy Degree in Health Promotion.

Your anonymity is fully assured. Names of respondents are NOT required and only aggregate data will be presented as results. All responses provided will be strictly used for the purpose of the research. Your contribution will be greatly appreciated.



Please tick ($\sqrt{}$) the appropriate responses.

| 1. | . Sex: Male 🗖 🛛 F | Female |
|----|--------------------------------------|--------------------------------------|
| 2. | . Age: | IN P |
| 3. | . Marital Status: Married 🗔 | Single 🗖 |
| 4. | Level of education: | |
| | I Nil | |
| | Primary | |
| | Junior High School | |
| | Senior High School | |
| | Three-year College of Education | on Diploma |
| | Bachelor's Degree | |
| | ☐ Masters | |
| 5. | . Do you have any formal education | n specifically related to child care |
| | provision, early childhood education | ion, or child development? |
| | | |

No Yes

258

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| | If yes what certificate |
|-----|---|
| 6. | Is the centre: |
| 7. | What is your current job position in the centre? |
| | Assistant Teacher/Caregiver |
| | Teacher/Caregiver |
| 8. | Which specific classroom or group of children do you spend most of your day with in the centre? |
| | Nursery |
| | Kindergarten |
| 9. | How many children are in your class? |
| 10. | How many of you (teachers) handle the class? |
| 11. | How many years have you worked in the child care field? |

Section B. Health and Safety Practices

| Please indicate your level of agreement with the following statements by | | | | | | |
|--|---|-----|-----|--|--|--|
| tick | ticking ($$) the appropriate response, either Yes or No. | | | | | |
| | Statement | No | Ves | | | |
| | Statement | 110 | 103 | | | |
| 1 | I take time to observe children during the day to check for | | | | | |
| | any change in behavior and respond approriately. | | | | | |
| 2 | I wash my hands before and after preparing meals for the | | | | | |
| | children. | | 1 | | | |
| 3 | I wash my hands after diapering, or assisting children with | | | | | |
| F | toileting. | | | | | |
| 4 | I and the children only use alcohol-based sanitizers as an | | | | | |
| | alternative to handwashing with soap and water, if hands are | | | | | |
| | not visibly soiled. | | | | | |
| 5 | If potty chairs are used, I sanitize them after each use. | | | | | |
| | There are lists of any food allergies of children posted near | | | | | |

| | food preparation area. | | |
|----|--|----------|----------|
| 7 | I encourage children (but not force) to try new foods. | | |
| 8 | The 100m temperature where children sleep is comfortable. | | |
| 9 | There are no cracks or holes in walls, ceilings or floors of the | | |
| | classroom. | | |
| 10 | There are no scattered things, rubbish, water damages, | | |
| | standing water or leaking pipes. Pest breeding areas are not on | ļ | |
| | site. | | |
| 11 | The floors are cleaned with dis-infectants any time the room | | |
| | is messed up. | | |
| 12 | I check toys and equipment to ensure they are in safe | | |
| | condition before children play with them. | | |
| 13 | I do not allow children to share personal items (cups, | | |
| | spoons, water bottles etc.) with each others. | | |
| 14 | I disinfect shared toys and mouthed toys before each child | | |
| | uses it | | |
| 15 | I use disposable gloves when handling blood and blood | | |
| | containing body fluids. | | |
| 16 | Strings, cords, ribbons, ties and straps long enough to encircle | | |
| | a child's neck are out of children's reach. | | |
| 17 | The following are not within children's reach: small objects, | | |
| | toys with sharp points and edges; plastic bags; coins; | | |
| | rubber or latex balloons; safety pins among others. | | <u> </u> |
| 18 | I actively supervise children who can feed themselves. I am | | |
| | also within an arm's reach of the child's high | | |
| | chair or feeding table. | | |
| 19 | Foods that are choking hazards are not served to toddlers. | | |
| | | <u> </u> | |

Thank you very much for completing this questionnaire.

APPENDIX E

SPSS Reliability Test Outputs for HSPQ

DATASET ACTIVATE DataSet1.

RELIABILITY

/VARIABLES=HSObservel Hwashing2 DiaperHW3 Sanitizer4 Potty5 Allergies6 NewFoods7 RoomTemp8 Cracks9 Site10 Disinfectants11 ToySafe12 Items13 ToyDisinfect14 Glove15 Strings16 SmallObjects17 Supervise18 Chooking19

/SCALE('ALL VARIABLES') ALL

/MODEL=ALPHA

/STATISTICS=DESCRIPTIVE SCALE CORR

/SUMMARY=TOTAL.

 Case Processing Summary

 N
 %

 Valid
 462
 100.0

 Cases
 Excluded^a
 0
 .0

 Total
 462
 100.0

 a. Listwise deletion based on all variables in the procedure.
 Procedure
 Procedure

| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
|------------------|--|------------|
| .844 | .645 | 19 |

| Item-Total Statistics | | | | | | |
|---|-------------------------------------|-----------------------------------|--|------------------------------------|--|--|
| | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Squared Multiple Correlation | Cronbach's Alpha if Item Deleted | |
| Observation of Children | 1262.53 | 4627704.965 | .031 | .185 | .847 | |
| Hand washing before and after meals for Children Hand washing | 1016.56 | 2961393.158 | 1.000 | 1.000 | .794 | |
| after Diaper change | 1262.60 | 4627933.889 | 141 | .204 | .847 | |
| Use of hand sanitizers | 1262.98 | 4627934.826 | 092 | .180 | .847 | |
| chairs | 1016.71 | 2961102.429 | 1.000 | 1.000 | .794 | |
| List of food allegies posted Children | 1016.89 | 2960735.585 | 1.000 | 1.000 | .794 | |
| encouraged to try new foods Room | 1262.70 | 4627931.522 | 110 | .121 | .847 | |
| temperature at the Centre | 1016.56 | 2961380.155 | 1.000 | 1.000 | .794 | |
| Cracks at the Centre | 1262.75 | 4628 <mark>316.886</mark> | 303 | .230 | .847 | |
| Pest breeding areas | 1262.66 | 462 <mark>7924.887</mark> | 113 | .235 | .847 | |
| Floored cleaned with disinfectants | 1262.62 | 4628107.235 | 250 | .233 | .847 | |
| loys and equipments safe | 1262.61 | 4627939.198 | 142 | .256 | .847 | |
| Sharing of personal items | 1262.59 | 4627782.121 | 034 | .148 | .847 | |
| Shared toys disinfected | 1262.81 | 4628220.854 | 240 | .334 | .847 | |
| Use of disposable doves | 1262.68 | 4628006.267 | 158 | .211 | .847 | |
| Dangerous things are out of reach of children | 1262.62 | 4627842.245 | 071 | .338 | .847 | |
| Small dangerous items are out of reach | 1262.63 | 4627869.898 | 086 | .277 | .847 | |
| Children are actively supervised | 1262.60 | 4628133.599 | 285 | .317 | .847 | |
| Choking foods are not served. | 1016.52 | 2961469.860 | 1.000 | 1.000 | .794 | |

...

DATASET ACTIVATE DataSet3.

RELIABILITY

/VARIABLES=HSObservel Sanitizer4 NewFoods7 RoomTemp8 Cracks9 Site10 Disinfectants11 ToySafe12 Items13 ToyDisinfect14 Glove15 Strings16 SmallObjects17 Supervise18

/SCALE('ALL VARIABLES') ALL

/MODEL=ALPHA

/STATISTICS=DESCRIPTIVE SCALE CORR

/SUMMARY=TOTAL.

| | | N | % |
|-------|-----------------------|-----|-------|
| | Valid | 114 | 100.0 |
| Cases | Excluded ^a | 0 | .0 |
| | Total | 114 | 100.0 |

Case Processing Summary

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
|------------------|--|------------|
| .683 | .676 | 14 |

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| | Scale | Scale | Corrected | Squared | Cronbach's |
|--------------------|---------|-------------|-------------|-------------|---------------|
| | Mean if | Variance if | Item-Total | Multiple | Alpha if Item |
| | Item | ltem | Correlation | Correlation | Deleted |
| | Deleted | Deleted | | | |
| Observation of | | | | | |
| Children | 21.73 | 7.191 | .074 | .100 | .686 |
| Use of hand | 22.26 | 6 000 | 004 | 170 | 000 |
| sanitizers | 22.20 | 0.033 | .091 | .172 | .698 |
| Children | | | | | |
| encouraged to try | 21.98 | 6:336 | .332 | .202 | .661 |
| new foods | | | | | |
| Room | | | | | |
| temperature at | 22.17 | 6.087 | .394 | .318 | .651 |
| the Centre | | | | | |
| Cracks at the | 00.40 | 0.107 | | | |
| Centre | 22.19 | 6.405 | .259 | .243 | .673 |
| Pest breeding | 04.05 | | | | |
| areas | 21.95 | 6.369 | .336 | .239 | .661 |
| Floored cleaned | 01.07 | 0.100 | | | |
| with disinfectants | 21.97 | 6,468 | .276 | .141 | .669 |
| Toys and | 04.00 | | | | |
| equipments safe | 21.89 | 6.361 | .381 | .274 | .656 |
| Sharing of | 04.00 | 0 774 | 0.40 | | 070 |
| personal items | 21.82 | 0,771 | .243 | .242 | .673 |
| Shared toys | 00.04 | 0.000 | 101 | 000 | 0.47 |
| disinfected | 22.21 | 0.020 | .421 | .202 | .647 |
| Use of | | y - | | | |
| disposable | 21.99 | 6.327 | DBIS .332 | .266 | .661 |
| gloves | | | | | |
| Dangerous things | | | | | |
| are out of reach | 21.87 | 6.398 | .388 | .352 | .655 |
| of children | | | | | |
| Small dangerous | | | | | |
| items are out of | 21.89 | 6.785 | .170 | .265 | .682 |
| reach | | | | | |
| Children are | | | | | |
| actively | 21.96 | 6.105 | .451 | .290 | .644 |
| supervised | | | | | |

Item-Total Statistics

DATASET ACTIVATE DataSet2.

RELIABILITY

/VARIABLES=HSObservel Hwashing2 DiaperHW3 Sanitizer4 Potty5 Allergies6 NewFoods7 RoomTemp8 Cracks9 Site10 Disinfectants11 ToySafe12 Items13 ToyDisinfect14 Glove15 Strings16 SmallObjects17 Supervise18 Chooking19

/SCALE('ALL VARIABLES') ALL

/MODEL=ALPHA

/STATISTICS=DESCRIPTIVE SCALE CORR

/SUMMARY=TOTAL.

| Case Processing Summary | | | | | | |
|-------------------------|-----------------------|---|-----|---|-------|--|
| | | N | N | 5 | % | |
| | Valid | | 348 | 2 | 100.0 | |
| Cases | Excluded ^a | | 0 | | .0 | |
| | Total | | 348 | | 100.0 | |

a. Listwise deletion based on all variables in the procedure.

| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
|------------------|--|------------|
| .768 | .782 | 19 |

| | Scale Mean if Item | Scale Variance if Item | Corrected Item-Total Correlation | Squared Multiple | Cronbach's Alpha if Item Deleted |
|------------------------|--------------------------|------------------------------|--|---------------------|--|
| | Deleted | Deleted | Conclution | Conclation | Deleted |
| Observation of | 32.62 | 8.749 | 221 | - | 765 |
| Children | | | | | |
| before and after | | | | | |
| meals for | 32.68 | 8.557 | .234 | | .765 |
| Children | | | | | |
| Hand washing | _ | | | | |
| after Diaper | 32.66 | 8.613 | .243 | | .764 |
| change | | | | | |
| Use of hand | 33.03 | 7.973 | .317 | 1 | .762 |
| Sanitizing potty | | | | | |
| chairs | 32.88 | 7.916 | .374 | | .755 |
| List of food | 22.42 | 0.407 | | - | 700 |
| allegies posted | 33.13 | 8.197 | .237 | | .769 |
| Children | | | - we | | |
| encouraged to try | 32.75 | 8.550 | .178 | | .770 |
| new toods | | at the | * | | |
| Koom temperature at | 32.60 | 8 204 | 262 | | 756 |
| the Centre | 52.03 | 0.2.94 | .302 | - | .750 |
| Cracks at the | 00.70 | 0.474 | 0.40 | | |
| Centre | 32.76 | 8.174 | .346 | | ./5/ |
| Pest breeding | 32 72 | 8 288 | 327 | | 758 |
| areas | UL.IL | 0.200 | .021 | | |
| Floored cleaned | 32.65 | 8.367 | .406 | | .754 |
| With disinfectants | 4 | | | | |
| equipments safe | 32.66 | 8.294 | .422 | <u></u> ; | .753 |
| Sharing of | 00.07 | 0.000 | 250 | | 757 |
| personal items | 32.07 | 0.390 | .500 | | .757 |
| Shared toys | 32.82 | 7.597 | BIS .544 | | .739 |
| disinfected | | | | | |
| Use of disposable | 32.72 | 8.230 | .356 | | .756 |
| Dangerous things | | | | | |
| are out of reach | 32.69 | 8.210 | .418 | | .752 |
| of children | | | | | |
| Small dangerous | | | | | |
| items are out of | 32.70 | 8.252 | .376 | 4 | .755 |
| reach | | | | | |
| actively | 33.63 | 8 442 | 424 | - 9 | 755 |
| supervised | 52.05 | 01-12 | | | |
| Choking foods | | 0.000 | 146 | | 750 |
| are not served. | 32.63 | 0.303 | 0 | | .703 |

Item-Total Statistics

APPENDIX F

Semi Structured Interview Schedule for Centre Head.

Head Background

| 1. | What ECCD of | centre do you work in? | Public or Private |
|----|--------------|------------------------|---------------------|
| 2. | Experience : | Less than three years | Three years or more |

3. Gender : Male or Female

Physical Environment: Outdoor Space

- Do you believe it is important to provide outdoors spaces for children to play?
- 2. Are there challenges with getting children enough equipment to play with outdoors?

Health and Safety Practice

 How easy is it for the centre to require and keep copies of doctor's notes or permissions for children who were out due to illness.

Centre Characteristics

1. Do you believe being a public or private ECCD centre affects the quality of the physical environment as well as the health and safety practices?

Teacher Characteristics

 Do you believe that a teacher's qualifications will determine how good they will take care of the children?

Thank you very much for this interview.

APPENDIX G

Semi Structured Interview Schedule for ECCD Teachers.

Staff Background

| 1. | Age: | Under 35 years | 35 an | d over |
|----|------------------------------------|-------------------|---------------------|--------|
| 2. | What ECCD cent | Public or Private | | |
| 3. | Experience : Less than three years | | Three years or more | |
| 4. | Qualification: | University degree | Diploma | SHS |
| 5. | Gender : | Male or Female | | |

Health and Safety

1. How easy is it for you and the children to use alcohol-based hand sanitizers as alternative to hand washing with soap and water, if the hands are not visibly soiled?

Centre Characteristics

1. Do you believe being a public or private ECCD centre affects the quality of the physical environment as well as the health and safety practices?

Teacher Characteristics

 Do you believe that a teacher's qualifications will determine how good they will take care of the children?

Thank you very much for this interview.

APPENDIX H

UNIVERSITY OF CAPE COAST

INSTITUTIONAL REVIEW BOARD SECRETARIAT

TEL: 03321-33172/3 / 0207355653/ 0244207814

E-MAIL: irb@ucc.edu.gh OUR REF: UCC/IRB/A/17 YOUR RFF: C/O Directorate of Research, Innovation and Consultancy

24TH JUNE 2016

Mrs. Salome Amissah-Essel Department of Health Physical Education and Recreation University of Cape Coast

Dear Mrs. Amissah-Essel,

ETHICAL CLEARANCE - ID NO: (UCCIRB/CES/2016/01)

The University of Cape Coast Institutional Review Board (UCCIRB) has granted Provisional Approval for implementation of your research protocol titled: ": Determinants of Health and Safety Conditions of Early Childhood Care and Development Centres in the Cape Coast Metropolis of Ghana."

This approval requires that you submit periodic review of the protocol to the Board and a final full review to the UCCIRB on completion of the research. The UCCIRB may observe or cause to be observed procedures and records of the research during and after implementation.

Please note that any modification of the project must be submitted to the UCCIRB for review and approval before its implementation.

You are also required to report all serious adverse events related to this study to the UCCIRB within seven days verbally and fourteen days in writing.

Always quote the protocol identification number in all future correspondence with us in relation to this protocol.

Yours faithfully, Yours faithfully, Yours faithfully, Yours faithfully, Yours faithfully, Yours faithfully, Administration ADMINISTRATOR

cc: The Chairman, UCCIRB

APPENDIX I

UNIVERSITY OF CAPE COAST CAPE COAST, GHANA COLLEGE OF EDUCATION STUDIES Department of Health, Physical Education & Recreation

 TELEPHONE:
 233-0206610931, 0543021384, 0268392819

 TELEX:
 2552, UCC, GH.



Ref. No. ED/HTP/14/0003/12

Cables & Telegrams: UNIVERSITY, CAPE COAST

5th February, 2016

TO WHOM IT MAY CONCERN

INTRODUCTORY LETTER - MRS. SALOME AMISSAH-ESSEL (ED/HTP/14/0003)

The bearer of this letter is a Ph.D student of the above department. In partial fulfilment of the requirements for the programme, She is conducting research titled "DETERMINANTS OF HEALTH AND SAFETY CONDITIONS OF EARLY CHILDHOOD CARE AND DEVELOPMENT CENTRES IN THE CAPE COAST METROPOLIS OF GHANA" and would need assistance from your outfit.

We would therefore be most grateful if permission could be given to her to carry out the research.

We count on your co-operation.

Thank you.

Dr. Charles Domfch For: HEAD

NOBIS

APPENDIX J

GHANA EDUCATION SERVICE

Jacouse of reply the Maaner and dure of this Letter sheald be quitted



METROPOLITAN EDUCATION DIRECTORATE P. O. BOX 164 CAPE COAST

REPUBLIC OF GHANA

14: 03321: 32814:0245852197 Fax:05521-52676 Lonal: . apecoastmeo.a yahoo.com My Rev. No CES MD EPT VOL.4:44 Youe Ref. No.

24th May, 2016.

THE HEADTEACHERS CONCERNED CAPE COAST MUTROPOLIS

REFERMISSION TO CONDUCT RESEARCH STUDY IN SCHOOLS WITH KINDERGARTENS IN CAPE COAST METROPOLIS

This is inform you that the Metro Directorate of Education has granted permission to Ms Salome Amissah-Esset, a Ph.D student of Department of Health, Physical Education and Recreation, University of Cape Coast, to conduct a research (through questionnaires and measurement of class) on the topic, "Determinants and Safety Conditions of Early Childhood Care and Development Centres in the Cape Coast Metropolis in some basic schools in the Cape Coast Metropolis of Ghana".

The study is expected to yield information that will be beneficial to the Early Childhood Development Division of the Cape Coast Education Directorate.

You should however ensure that the study will not interfere with normal teaching and learning activities. Please, accord her the necessary assistance to ensure a successful exercise.

Thank you.

ROBERT AWDONOR-WILLIAMS (HRMD) for : METRO DIRECTOR OF EDUCATION CAPE COAST.

¢¢.

Salome Amissah-Essel Department of Health, Physical Education and Recreation, University of Cape Coast Cape Coast.

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APPENDIX K

P. O. BOX 200, CAPE COAST CR. OFFICE TEL.0243 567450 Email: dswcapecoast@yahoo.com Our Ref: CCMA/DSWCD/.....

Your Ref:

Date: 16th March, 2016

TO WHOM IT MAY CONCERN:

LETTER OF CONFIRMATION

DEPARTMENT OF SOCIAL WELFARE AND COMMUNITY DEVELOPMENT

SALOME AMISSAH-ESSEL

This is to confirm that the bearer of this note is a Ph.D student of the Department of Health, Physical Education and Recreation, University of Cape Coast, pursuing a research on Early Childhood Care and Development in the Cape Coast Metropolis. I recommend that you provide her with the needed support to enable her undertake the study.

Thank you.

Monica Siaw (Metro Director of Social Welfare)




APPENDIX L

Verbatim Transcripts of Interviews with ECCD Heads

Respondent 1

Time: 9:30am at the school.

Date: 15/11/2017 12:58

Interviewer: Please good morning

Respondent: Good morning

Interviewer: Please is this centre public or private?

Respondent: it's public

Interviewer: please for how long have you been teaching here?

Respondent: in this school for about 12 years now

Interviewer: If you say in this school does that mean you've been teaching elsewhere?

Respondent: yes, I was teaching somewhere, I was in the private school.

Interviewer: Do you believe it is important to provide outdoors spaces for children to play?

Respondent: It is very important. It is very very important because for the KG, for the program we are doing the FTT saber, their program we have the in-door activities we have table top activities, they go to centers. We have outside activity, so they go and have some of the activities outside so we have to provide some things outside for them to use aside their playing outside, they also learn outside so when they have something in the outside it will help.

Interviewer: Do you have enough playing equipment outside for your children?

Respondent: For now we don't have enough, we don't have the space is not.. what we have is at our old place they were using car tires to play and they have also drawn something on the floor for them to play. They are there but here we can't have it.

Interviewer: So the car tires are they there or they are not there?

Respondent: They are there but we have few of them here that the other classes use. We don't bring it out because when we bring it out after playing, they don't get a place to store them.

Interviewer: So now what are the challenges in getting the children enough equipment to play with, are there some challenges, like see-saw, other things do you have the challenge in getting those things?

Respondent: We have a little challenge. For the nature of our, I don't know but for some time, we are not provided with those things. We have to come

out with something. We have to improvise and create something for them to do. The office doesn't provide those things. If we want them we have to spend some money to try and build up some things for them to use.

Respondent 2

Time: 10:40am at the school.

Date: 15/11/2017 31:50

Interviewer: Good morning

Respondent: Good morning

Interviewer: Please...this centre; is it a private or public?

Respondent: Public

Interviewer: For how long have you been teaching?

Respondent: Teaching as a whole or here?

Interviewer: errm...at the early childhood?

Respondent: 3 years now

Interviewer: Do you believe that it is important to provide a large playing ground for children to play?

Respondent: Yes...It is very important. Children are not like adults. They can only sit for a very small minutes. The rest must be a play. And the playing should not just be a play but the environment should help them learn while they are playing. For example, they can be asking themselves to mention the names of animals that have been drawn on the walls while they are playing because the teacher mentions them in class. When that environment is created, it really help them to learn very fast because it provides the children with the practical things they've been learning or hearing in class. So I think it is very important to provide a playing ground for the kids to play.

Interviewer: Are there challenges in getting the children enough playing equipment?

Respondent: Playing equipment...so what if they abuse it? Whenever there are enough playing equipments, they been playing with them alright. But...errrmm...if they use them for a while, some abuse it in the way of destroying them. Even though some have some of the playing equipment, they will still demand for the ones their colleague is playing with...they will in turn cry and disturb.

Interviewer: Does this school have enough playing equipment?

Respondent: Hahaha...even we do not have enough space for the kids to play... even look at our plot allocated for the whole primary...hehe... where do you think we will get space for the KGs to play?

Interviewer: So in case you want to get playing equipment, whose responsibility is it?

Respondent: Oh example, like the "see-saw"....for the others we the teachers at times contribute to buy them okay. Errrmm...something like the "see-saw"....errrmm if we can get some NGOs to assist to get some. The

government has a lot to do but at times you have to consider certain things first. As you can see, even if the government wants to come in, she will consider the classrooms first and not the playing ground even though it is important. We teachers we do provide but it won't be enough. The capitation grants too we use it for other equally important things like creating additional classrooms. The churches can also help us get some of the playing equipments.

Interviewer: What of parents?

Respondent: Yeah. Even the parents are to pay GHS 0.30 for the development of one of the class koraa is a tag of war....Parents are not helping at all.

Interviewer: Is it the public schools that parents do not want to help?

Respondent: Errrmm....yes, for instance, I think they see education as important but they do not pay attention to it. They don't value education...that is how I will say it.

Interviewer: What about doctors' reports? When they get sick and go home, do they bring doctor's report to show whether or not they were sick?

Respondent: Will they even send them to the hospital?

Interviewer: That is another question.

Respondent: most of them will just send the children to the drug store to buy medicine for them or give them herbal medicine. So how will they have doctor's report? For that one, we do not have records for doctors' reports.

Interviewer: Do you believe that being a public or private sector affects the quality of the physical environment as well as the health and safety practices? Because it is a public school it will be different and if it is a private school it will be better?

Respondent: Hmmm.... Being here for 3 years, we only have the first aid. And for private schools, because they take money from the parents, they will meet and say...take this amount and get you a doctor or a nurse. Or you will go for a particular hospital so that we will be sending our children to. But for public centers, you can't take money from parents without any approval – you cannot do that. So that one when the government provides a way that you can easily do that wouldn't go against GES rules and regulations.

Interviewer: So will you say as at now that private day cares are better in terms of appearance and what they do there than public day cares?

Respondent: For the comparisons, I can tell you the truth. I have not been going around to other day care schools so I can't say much about it. But from what I hear, some of the day care schools have nice facilities; beds; have playing grounds and nurses too. That is what I have heard from people but I have not been there. But for here, here we are! For KGs koraa it's a combined class.

Interviewer: And it is because it is a public school right? Because it is a government school that is why you do not have the facilities?

Respondent: well so far I don't know ... some private schools might have a well establish facilities. Let take it that our place we have classrooms and we have everything, and if the capitation grant comes, we can use it to buy playing equipments for the children. But for our school in particular, we need a lot of things. So you cannot use the capitation grant to buy those things for now unless maybe a colleague teacher sacrificially gives something....even that, there is no light here. For these lights, the head teacher connected it from his house to the school that the churches sometimes use services. So if you want any errmm ... you want to use your laptop we tell him to switch his meter for us to use. For our school, we need a lot...hahaha. This head teacher has done a lot for this school.... I have not seen any head teacher like him before. His heart is really for the school. Even if you ask him to sell his shoes for the school, he will do. He is that kind. He is all for the school.

Interviewer: And do you believe that having a higher educational qualification determines how good a teacher will take care of the children?

Respondent: hmmm Ghana of late...hmmm..., some people merely go to school for the certificate whiles others too go to school for knowledge and the certificate as well. So you are really upgraded. It is really possible. You've gone to school to acquire additional knowledge so it helps you to take good care of the children. For example, we recently went for a workshop about children learning and the things that we were taught when I put it into practice, I have realized that it is really helping. So, acquiring more knowledge helps if it is being put into practice.

Interviewer: Thank you very, very much. Respondent: You are welcome.

Respondent 3

Time: 12:00pm at the school. Date: 15/11/2017 19:11

Interviewer: Please good afternoon

Respondent: Afternoon

Interviewer: Please this centre is it public or private?

Respondent: Public

Interviewer: Please for how long have you been teaching?

Respondent: 26 years

Interviewer: Do you believe that it is important to provide outdoors space for children to play?

Respondent: Yes

Interviewer: Why should they get space to play? Why is it important for them to get the outdoor space for them to play?

Respondent: They learn through play and socialization and so on, it is one of the factor.

Interviewer: Are there challenges in getting children with enough equipment to play?

Respondent: Yes. No one is even ready to provide, no one, from the parents or from the head.

Interviewer: So if you tell parents to buy something like the see-saw, will they?

Respondent: They will say that it is the authorities who are supposed to provide.

Interviewer: I want to find out, do you believe that a teacher's qualification will determine how good they will take care for the children? If somebody have masters, it will determine how good they take care of this children.

Respondent: The answer will be yes and no.

Interviewer: Why?

Respondent: The answer will be yes because you have to learn more, upgrade yourself so that you will be abreast with time, to know what is going so that you will be able to help the children but No, no with others because just the name that I've acquired, this and this certificate but you don't want to go far, there are others that even when they are in the class, they don't do their best, they don't do their best.

Interviewer: What about if they go to the doctor and come, do they bring a doctor's report, like somebody wasn't well they go, do they come back to tell you that this what the doctor says?

Respondent: No, sometimes, we even advice some of the parents to let some of the child to stay home for about some few days, take his or her drug, sometimes they force them, they bring their drugs to school for teachers to give it to them, so some of them, I ask, Maame, take my number, after hospital let the child stay home for about a week.

Interviewer: Do you believe that being a public or private early child center determines the quality or is public school better than private school or private schools are doing better than public schools in terms of health and safety?

Respondent: Yes, private schools are doing better than the public schools? **Interviewer**: Why is it so?

Respondent: They have all the facilities, the place is neat, the place is neat well furnished not like our place. Look at our floor, last term it was port holes, last term..we have to do demonstration against the head teacher before he was able to do this for us so private schools, are better.

Interviewer: Is it because public schools you don't charge or why?

Respondent: Well for that we can't talk much about it. They say they are going to make a better place for us but

Interviewer: Ok..so please thank you very much for your time... I'm grateful Respondent: Alright

Respondent 4

Time: 2:00pm at the school. Date: 15/11/2017 13:30

Interviewer: Please good afternoon

Respondent: Good afternoon

Interviewer: Please this center is it public or private?

Respondent: Private

Interviewer: Please for how many years have you been teaching?

Respondent: More than 3 years

Interviewer: Do you believe it is important to provide outdoor space for children to play?

Respondent: We know that, with pre-school, children learn through playing so while they are playing, they are learning, it is very necessary.

Interviewer: Do you have enough playing equipment for children to play outside?

Respondent: No, they are inadequate

Interviewer: Are there some challenges in getting them? Do you face some challenges in getting some of this equipment like see-saw?

Respondent: Yes we do

Interviewer: What's the challenge?

Respondent: With this school, we don't have sponsors. We sponsor ourselves so we buy our teaching materials from the school fees that they pay, some don't pay at all and some pay it in bit. Some will pay half and they won't the rest so getting enough money to provide this thing is very difficult.

Interviewer: Do you believe that a teacher's qualification will determine how good the teacher will take care of these children in terms of the pre-school?

Respondent: Yes, I believe because those with diploma or degree in child care, they know how to handle the kids, they know how to relate with them so if you get one like this, you are ok, you know that he will do or he or she will perform well.

Interviewer: What about if they get sick and they do, do they come back with Doctor's report?

Respondent: They don't do that, they don't.

Interviewer: Do you believe that when it comes to private and public centers, do you believe that in terms of quality physical environment, do you think private is doing well comparing to public school?

Respondent: Sure. Private schools are doing very well, they always, why they are doing well is that, they always want to sell their school so they make sure everything is in order so they are doing better than the public schools.

Interviewer: thank you very very much

Respondent: You are welcome

Respondent 5

Time: 9:00am at the school. Date: 17/11/2017 25:41

Interviewer: Please good morning

Respondent: Good morning

Interviewer: Please this your center is it public or private?

Respondent: It's public

Interviewer: Please for how long have you been teaching in KG?

Respondent: KG, I think 8 years

Interviewer: Do you believe it is important to provide outdoor space for children to play?

Respondent: Yes... these children, their IQ is not higher than the primary people so when you teach them a little, there should be a little out game program so that they are mind will rest for a while. You can't teach them morning to afternoon. There should be playing grounds so that when they learn, their mind will get settled.

Interviewer: And please do you have enough playing grounds?

Respondent: We don't have some

Interviewer: Because of the land issue?

Respondent: That's what I will say, because of the land, we don't have land. We don't have the equipment too

Interviewer: What is the problem in getting the equipment?

Respondent: ok..the equipment I don't but it seems government should supply all these things. Once it is a government school, I think they should be able to provide all these things.

Interviewer: So will parents be willing to contribute to buy for example seesaw?

Respondent: In fact, in the public schools, when you are even getting something from the parents, it is difficult. Getting something is difficult so, I don't even, we don't rely on parents because if you rely on parents, you won't go forward.

Interviewer: Do you believe that a teacher's qualification will determine how well they take care of children, when it comes to KG particular?

Respondent: The teaching itself is a sacrificial work and it is call I will say. If someone has gone to training college, university that does not know how handle children, then it's baseless.

Interviewer: So it's not because you have masters or?

Respondent: If you have the masters and you cannot impact the knowledge to the children, what is the basis of the masters? It is baseless. So I think teaching as a profession is a call, like nurses.

Interviewer: Especially with children.

Respondent: With children too. It is call. Because of these children some are ok, according to, it's individual difference so if you don't have the heart to do this work, you can't do it because some will come, you correct him 3 times. He will go and come, you will find another problem so if you don't have the heart you will just go and sit down so what will the children go and do? You haven't given any knowledge to the child but if you have a heart, you will check your techniques. You have done this, this I have taught them, it's not going well, or even call them, those who are not cooperating, call them in front of you. Use individual method of teaching, teach them and they will get it.

Interviewer: Please if they go to the hospital, do they bring doctors report as to what happened?

Respondent: No, they don't bring any report and we didn't even bother to ask because you have sent your child to the hospital, what do we have to ask. What we are expecting is that if the child is well, you bring him back to school.

Interviewer: Do you believe that public or private school will determine how quality the physical environment is? Will you say that private is better than public?

Respondent: In terms of parents awareness, I will say private is better than public but in other words, public too is better than private because we have advantage and disadvantage, so we have to weigh them because in private, we don't have trained teachers, we have this JHS leavers and that is it but in public, we have trained teachers and they have been trained purposely for children, so they know how to cater for the children they know how to impact knowledge that is for the public but as for the public, how the parent behave towards the children, it seems that some people even say that public schools they don't learn and I don't know the meaning of they don't learn. In fact to train children is not one side, it is both the home and the school so if one is lack somewhere, the other is trying his best, it can't balance. But as for private school, he knows that 7.00 the child should be there, they know that I have to iron my child's uniform, wash it, dress my child well because competitive. They are competing but here, where is the, what is the completion here. In private schools you will see that they are sitting in classes, when parents are sending their children to school, you will see that they are wearing shoes, so they see the neat atmosphere. When you come to the public schools, parents are not there to guide the children to class so this little children when some come to school, you could see that there is urine all over their body and you will ask where is the parent? There are not sleeping with their parents or they are sleeping somewhere and their parents are also sleeping somewhere, so it is problem but in terms of academic qualification in terms of the teaching, you can't say that private school teaches more than public schools. You can't tell

me that because in our case, some are even getting 7 one's 6 one's. They are also getting the big schools. In terms of if someone goes to public school and gets six and someone goes to private school and gets six, there's no difference but in terms of private schools, the teacher seems to know that, if there is a home work, the child will do it, if we give a child home work right now to send home, it is problem because there is no one to look after the child to do the homework but as for private schools, they will say when your mother helps you, let him sign that you have finished doing the homework and here who is going to assist you to sign so in fact it is a problem, it is a great problem, it is not a little problem at all and to solve it is not easy because the parents are not helping with the education at the public sector to have a good foundation.

Interviewer: Please thank you very much for the interview, I appreciate it, thank you

Respondent: You are welcome

Respondent 6

Time: 10:15am at the school. Date: 17/11/2017 34:53

Interviewer: Mummy please good afternoon

Respondent: Good afternoon

Interviewer: Mummy please this center is it public or private?

Respondent: It's a private

Interviewer: Mummy please for how long have you been in the early childhood system, as in working with children?

Respondent: Come January will be 5 years

Interviewer: Mummy please do you believe that it is important to provide outdoor space for children to play? NOBIS

Respondent: Yes, it is very very important. It is not only outdoor but indoor and outdoor. The outdoor plays a major role likewise the indoor in the sense that when we go outside, the environment, like a enabling environment, if you've heard of that. Children will have to go round to be able to access what is outside. It also helps because children learn through playing so if they learn through playing, then it is not only indoors they should go outside, in the garden, whatever they see there and stuff like that. You will see that they have some of those things at home but with an adult with them, they will be able to show them what they are able to do and also their physical environment also plays an important factor like human life if you put in equipment that they will be able to use it helps. If you go to, even though I don't have them in my facility, I used to have. Something like a slide for children to actually slide on, it helps them with their physical ability. We have a lot of toys, equipment on our play ground, some are like tunnels. People don't know the use of that

tunnel but it's actually a good thing for a child who is not able to crawl. Some of them are scared of using, they are not, I will not use the word scared but like they are, they don't have the confident to actually attend certain equipment so if the equipment is there and there is an adult to show them how to use it, it is very good. And some of the equipment too, you cannot bring them indoors. They have to stay outside so that the children will be able to access it so having an outdoor equipment for children to play plays a major role for their upkeep.

Interviewer: Mummy please are there challenges in getting children these equipment, enough equipment to play with especially outdoor?

Respondent: It depends on the setting. Some setting believe in certain equipment but I will always say that we should be able to look at the safety of the child before you are able to provide that kind of outdoor equipment. If let say the see-saw that I was using for instance, if a child will have to go there, there have to be supervision. You don't have to allow children to go out to play on their own so certain equipment too I feel yes, you need to check it before you provide them. Mainly it depends on the age of the child. The age of the child will determine the type of equipment that you want to provide. Right down from babies, let's assume pre-schools, we have certain toys that is suitable for their age and when you look at the older ones, you have to look for something appropriate for their age so we have to look at all those things before you are able to provide, how do you call it, you cannot just put a child a bouncer which is for older children. You have to have smaller one that the child can use because we have small one, if you look around, majority of them, they've spoiled them but what can I do? Replacing it is quite a challenge because it is expensive and then if you are buying things of that nature, you have to look at quality, quality plays a major role looking for equipment and then as much as looking at quality, you have to also look at wear and tear because it will be outside. If children have been using a particular equipment for a while, in Ghana they don't check. In abroad, they call some organizations as OFSHEAD, they are very particular. When they come, they go round checking everything because safety is number. You have to check the thing that the children will be using. We actually check safety. We are safety conscious with some of these things.

Interviewer: Mummy please do you believe that a teacher's qualification will determine how good they will take care of the children?

Respondent: No

Interviewer: Like if you have masters then they will take care of the children? Respondent: No. You should love the job. You should be someone who actually loves to be with the children.

Interviewer: So please I asked better whether a teacher's qualification will determine how they take care of the children.

Respondent: No, no. To be able to love kids, you should have experience of such situations. I will set examples as to as here, some of our teachers who were taking care of children in the pre-school. They all were holding diploma in business studies, two on diploma on business studies and one too was a certificate in teaching and stuff like that. But they could face a lot of challenges and stuff like that because they could not do what was expected of them so I suggested they go and take the social services training which they did and it actually helped them a lot, because when you know how to handle children, you know how to teach them and stuff like that. You shouldn't go masters or whatever to be able to take care of them. You should have the training to handle them. So having the training is a different thing and holding the masters is a different thing. So when we are talking about the pre-school that is one thing that we should be looking at.

Interviewer: Then mummy please when the child gets sick do they bring doctors report back to the school to inform you?

Respondent: It is only in rare cases if the child has been away for a very long time. They do bring in report to show that the child was at the hospital but it is for the school, we only put it on their file just it to show that child was aware for some period of time, just because of marking of the register.

Interviewer: Mummy please do you believe that being a public or private center will determine the quality of their physical environment, is private better than public?

Respondent: I will not say private is better than the public because let say UCC for instance. UCC is a public school or private school more or less, but they do have all these facilities as compared to my school. Mine is a new school, it is 5 years old. They are over 50 years so they are able to implement all those equipment and stuffs like that. But you go to certain schools like the, I don't have to mention certain names. They do not have anything but we cannot compare ourselves to public schools. The government comes to provide these facilities and sometimes, these NGO's also come around, they are able to give them something but in private schools, some actually pay huge sums of money to get this physical equipment for their children to use, so it is a way, it is not all private schools who have play equipment neither do you have in public schools. It is not all public schools who have this.

Interviewer: Thank you very much mummy

Respondent: I hope I've actually answered your questions well? **Interviewer**: You have

Respondent 7

Time: 12:00pm at the school. Date: 20/11/2017 18:07

Interviewer: Madam please good morning

Respondent: Good morning madam

Interviewer: Please this center is it public or private?

Respondent: It is a public sector

Interviewer: Please for how long have you been teaching?

Respondent: This is my twelve year in teaching

Interviewer: Do you believe it is important to provide outdoor space for children to play?

Respondent: Yea as the saying goes all work and no play makes Jack a dull boy, so if you don't provide space, outdoor space for children to play, it means you are making them work, work, work and if they work throughout, their minds become tired and when the mind is tired, anything that they work, anything that they do will not, they wouldn't get the concept so you provide spaces for them and you children also play as they, they learn as they play so they, the two helps in teaching and learning.

Interviewer: Do you have enough playing equipment?

Respondent: No, we don't have

Interviewer: What are the challenges in getting the children enough equipment to play?

Respondent: It is the funds, the funds because when, we do tell the head about they getting equipment for playing but they also tell us no money, the capitation cannot capture so, in fact, it is problem.

Interviewer: What about parents? Are parents willing to contribute to buy for example see-saw for their children?

Respondent: They are not, they are not and when I came to this school in fact the PTA we've never discussed that, and if you see the background of the parents I don't think but we will consider that and I think one of the PTA meetings, maybe.

Interviewer: If you say the background of the parents, what do you mean by hat?

Respondent: That is their financial position, talking about their financial position so we are just....

Interviewer: They are have or they don't have?

Respondent: They don't have, they don't have so..

Interviewer: I think that leads me to the next question that do you believe that handling these children, one needs a higher degree before you can handle them better, like someone, your degree has to be high before you can handle these kids.

Respondent: No, I don't believe in that. I believe in the willingness, if you are willing to help them but with the degree no, the willingness of the person to just to understand them.

Interviewer: So please how, do these sick people bring doctor's report as to what happened?

Respondent: Oh... we don't ask for that so they don't.

Interviewer: Please do you believe that public or private, being public or private will determine the quality of physical environment as well as the health and safety of the children?

Respondent: Yea.. I believe that. With the public, everything is done by the government and if the government the national cake you don't get yours it means your class will not be well equipped your environment will not be well equipped but with the private they are doing it for money so they make sure that the physical environment, they beautify the physical environment and that attracts the health and safety of the child because if you to go private school, well equipped private school, you see dustbins all over, you see well decorated things at least even if the child is sick and enters the school he gets healed.

Interviewer: Ok.... Thank you very very much

Respondent: You are welcome madam

Respondent 8

Time: 10:00am at the school. Date: 21/11/2017 20:18

Interviewer: Daddy please good afternoon

Respondent: Good afternoon

Interviewer: Daddy please your center is it public or private?

Respondent: Private place

Interviewer: Daddy please for how long have you been working with early childhood center?

Respondent: For seven years

Interviewer: Daddy please do you believe that it is important to provide outdoor spaces for children to play?

Respondent: Very well. It is very very important. Important in such a way that in most instances they have to come out and enjoy a bit of sunshine. moving about so providing outdoor space for them to maneuver and play, stretching their legs is very very important, that is if you have.

Interviewer: Daddy please do you have enough playing equipment outside? Respondent: Yes we have.

Interviewer: When it come to your center to you have challenges in getting children enough equipment to play with?

Respondent: No, it isn't all the time that you have to provide them with these things. There are some equipment that they have to share and play with, and in a way, you can't be providing each kid with an equipment. Let them know how they can share together or whatever. There are some equipment that can be used by a single person but there are some too they have to share to know how to share and enjoy that very game.

Interviewer: So daddy do you believe that, even though you have addressed some of the issues, do you believe that having your qualification will determine how good you will take care of the children?

Respondent: Yes and no. because there are certain things that are practical and maybe you may not even learn that thing in your course so when you come here, there is something you have to learn so I type everything to you. When you have the degree, there certain things that you will learn but now the practical, you are now seeing. Oh, I have this idea but you are now seeing it, coming to see the practical thing happening so how you are going to adjust yourself with whatever you have learnt so having the degree is another thing and having the practical work attached to it to be able to apply is another thing.

Interviewer: Daddy please how easy is it for you to get a doctor's report back in case the child gets sick and go to the hospital, do they bring doctor's report? **Respondent**: That one its very difficult. If a child gets sick and the parents take the child to the hospital, if the child gets well we ask what the problem was. Some of them even try to hide because their health report also shows the sickness but the normal infects like cold but there are some too they wouldn't want to make it open was everyone so what do you do?, if the parent doesn't want to provide an information that you think and you can't request, you are not the health personality to request for the card after all the certain things on it that you can't read so.

Interviewer: Daddy do you believe that being a public or private center will determine the quality of their physical environment and their health safety practices?

Respondent: Definitely

Interviewer: Do you think private early childhood centers are better in their physical and health practices compared to the public?

Respondent: Yea, yea. As I told you in the earlier interview or question, everything that is done private is probably better than the public. It is the concept or the mindset of the private so this is how I do it.

Interviewer: So why will a private center do better than the public center? **Respondent:** It is all about funds. It is all about funds because private man is motivated by profit, the public we know it, it is about the government, government lack resources. It isn't you that you are going to be catered for so maybe you have one, you will go give it to another person but private, its far better.

Interviewer: Daddy I think that is all, Daddy thank you.

APPENDIX M

Verbatim Transcripts of Interview with ECCD Teachers

Respondent 1

Time: 9:10 am at the school. Date: 15/11/2017 24:32

Interviewer: Please good morning

Respondent: Good morning

Interviewer: please your age are you under 35 or above?

Respondent: I'm under 35.

Interviewer: please this your center is it public or private?

Respondent: public

Interviewer: please for how long have you been here?

Respondent: I've been here for 6 years

Interviewer: what's your qualification?

Respondent: Diploma

Interviewer: And hand sanitizer, how is it easy for you to use it. You and the children to use hand sanitizer.

Respondent: In fact, for the hand sanitizer, we as teachers we have one in our various bags but for the children, because it is expensive the children cannot afford. So what we do is that they use the water in the jerrycan bucket with soap and wash their hands so they can't use hand sanitizer because they don't have some.

Interviewer: Do you believe being in a public or private center will affect the quality of the physical environment, when it comes to public and private you think being in one of this, they will have better physical environment?

Respondent: With this I will say yes or no because looking our school for instance, looking at where the school is located, sea side shore, the place will be stingy so for that one you cannot say that because of the parents, the people who stay in the community, that's the work they do. But when we go to the private sector, most of the schools are found in towns or place that you will not inhale any bad thing. And secondly, parent who take their wards to private schools are responsible than those who take their wards to public schools so they do provide things, they pay monthly, for the proprietor or proprietress to do what the school plead or needs. They make sure they have all their things in order. They have blocks for those who are doing vocational skills, technical skills than in the government schools. So I say parents who take their wards to private schools are more responsible than those who take their wards to private schools are more responsible than those who take their wards to private schools are more responsible than those who take their wards to private schools are more responsible than those who take their wards to private schools.

Interviewer: Do you believe that a teacher's qualification will determine how good the teacher will take care of the child?

Respondent: Qualification counts but I think the person's desire in the work should also come in because one can qualify but person can decide not to teach the right thing so I think that one desire counts because people are here they have SHS certificates but they are doing well.

Interviewer: So it's not like you have a degree so you can take care of the child.

Respondent: If you the person has the desire, if challenge comes you will know that person can do it but if the person has his or her masters and the person desires is not to do the work, how is the person going to do the work? It will not be effective.

Interviewer: Ok..if there is nothing else you want to add, I want to thank you very much for participating. Thank you.

Respondent 2

Time: 10:15am at the school. Date: 15/11/2017 20:18

Interviewer: Please good morning

Respondent: Good morning

Interviewer: Please your age are you under 35 or above?

Respondent: 35 and above

Interviewer: Please this your centre is it public or private?

Respondent: Public

Interviewer: Please for how long have you been teaching?

Respondent: My teaching experience... I think is 12 years.

Interviewer: Please what's your qualification?

Respondent: University degree

Interviewer: And we said we should be using hand sanitizer, how is it easy for you to use it. You and the children to use hand sanitizer.

Respondent: We are not using that we use soaps here.

Interviewer: So where do they get the water from?

Respondent: Oh, we fetch it here at times. The actual thing is that, the fact is we are facing water problems. You see this classroom, we you put the basin here, but the time that you realize, they will spoil everything on the ground so what we have doing is when you go, you fetch the water and wash your hands, if they visit the natures call.

Interviewer: Do you believe that being in a public or private centre will affect the quality of the physical environment?

Respondent: Yea. it is affecting us. If it is a private sector, the private man, he is using his for money, so he makes sure that he provides everything for the kids or which he is going to make the kids to pay. Our case, it is not so in the sense that government will plan everything and now too they have asked us

not to levy any child so can't do anything like that so I think, our center being the public side, is affecting us.

Interviewer: Do you believe that a teacher's qualification will determine how good you take care of the children?

Respondent: No. No. It doesn't take master's or PhD to take care of children. Why am I saying that because, you see teaching here you must be, it depends on the individuals character, if you are not patient enough you can't handle this children. Teaching a child, our system is such that, we are saying that when the child gets to 4 years, he or she should be sent to KG1 whether the child have been to nursery or not so looking at our case most of them, most of the kids have not been to KG. You have to go through certain things, if you are saying that sometimes the whole first term you have to go off the syllabus. You teach them write to write the letters, how to write the numerals and certain things. We made go through this things pre-writing activities whiles this pre-writing activities is done in the nursery we are sometimes it will take a long this thing for us to look at and if you are not patient enough, you can't teach them so it doesn't matter the qualification. For the qualification, it is there if you are not patient and them let me say that if you are not touched by God you can't do this work.

Interviewer: Thank you very much.

Respondent: you are welcome.

Respondent 3

Time: 12:30pm at the school. Date: 15/11/2017 16:54

Interviewer: Please good afternoon

Respondent: Good afternoon

Interviewer: please your age are you under 35 or 35 and over?

Respondent: I'm 54

Interviewer: 54, so 35 and over

Interviewer: Please this your center is it public or private?

Respondent: Please it is public

Interviewer: please for how long have you been teaching?

Respondent: I've been teaching, almost 24 years

Interviewer: Please what's your qualification? Degree, diploma, SHS what's your qualification?

Respondent: I can say, SHS because I completed commercial school, so I'm holding NVTI. I intended to go to polytechnic but I travelled so I couldn't make it, when I came there was no money and i got married also the my husband also wanted children so I couldn't go..

Interviewer: So NVTI?

Respondent: yea, NVTI. I have RSA too RSA stage 1

Interviewer: They say it is good to use hand sanitizer, how is it easy for you and the center to use hand sanitizer?

Respondent: I think they bring us some small one but when they finish they we give them but they said when they get enough money, they will buy us the big one. It has been introduced already. The children they know, most of them even have the small one.

Interviewer: Do you believe that public centers are better than private centers?

Respondent: Private centers are better than public in terms of pre-school. Public, we can make the change, we can do what the private are doing. You see, the truth is truth, because they have been provided with toiletries and other things you see, they employ more teachers.

Interviewer: Why are the private people doing better than the public people?

Respondent: I think, they have, they motivate them. The PTA agreed to motivate the teachers.

Interviewer: And do think that maybe because public is free?

Respondent: You it is not because it is free, at times and at times I think there should be that cordial relationship between the head, between those officials. At times you might not even give someone money, but your words of encouragement can bring someone up, that one is a fact.

Interviewer: Do you believe that a teacher's qualification will determine how good the teacher will take care of the children? If the teacher has masters or whatever then they will be able to take care of the children.

Respondent: I will say that pre-school care is calling form the Lord himself, if you don't have passion, you can't do. I remember my former school, they made fun of me, they don't want dresses to be dirty etc it is wrong. Since you are a woman for instance, should be able to take care of any child you see, so there is a problem on that. Everybody want to be in JHS, and they ignore the pre-schools, it is wrong. You can start from the pre-school if you say there is no job, you can start pre-schools, they are ignoring that place for only people and we are against pupil teacher and we don't even... it is serious but pupil teachers do a lot of work I'm telling you.

Interviewer: Thank you very much Auntie.

Respondent 4

Time: 1:00pm at the school. Date: 15/11/2017 14:05

Interviewer: Good afternoon Respondent: Afternoon Interviewer: Please your age are you under 35 or 35 and above? Respondent: Under 35

Interviewer: please this your centre is it public or private?

Respondent: private sector

Interviewer: please for how long have you been teaching here?

Respondent: 1 year

Interviewer: what qualification?

Respondent: SHS

Interviewer: And they say that it is important to use hand sanitizer, do you use hand sanitizer?

Respondent: Yes

Interviewer: Do you have some yourself or for every children or how?

Respondent: I have one for my personal but for the child, they use water, they use, water and soap after they have visit the toilet and after they are going to eat.

Interviewer: Why are the children not using hand sanitizer?

Respondent: Because I can't provide them and the school too cannot afford it for them but with soap, the class can use one soap.

Interviewer: Now theirs is this question, when you look at private KG's and then government KG's which one of them do you think has environment or quality, comparing the 2.

Respondent: I will say the private sector because, normally the government sector everything will be depending on the government, the government to bring everything for them but when you come to the private sector, the proprietor or the headmaster will provide for them, they will normally use the school fees because they have facilities so they are easy to get some basic things but for the government, the government will promise this day but maybe they cannot.

Interviewer: Do you believe that a teacher's qualification will determine how the teacher will take care of the children, like if someone has degree, master's then the person will be able to take care of the children well?

Respondent: No as for me I don't think so, but by skills or by training because when we go to some sectors some people are not having let say master's but they can work so it's by skills or by training. Example like the fire service and the police service, you see some of them they will work on their effort but not the let's say the master's level or the professional level, but the train they are have it.

Interviewer: So you are saying that if you are trained, you can take care of the children?

Respondent: Yes

Interviewer: Not because you have higher qualification?

Respondent: yes

Interviewer: Thank you very much

Respondent: ok ok, you are welcome.

Respondent 5

Time: 9:30am at the school. Date: 17/11/2017 25:27

Interviewer: Please good morning

Respondent: Good morning

Interviewer: Please your age are you under 35 or above 35?

Respondent: Above 35

Interviewer: Please this your centre is it public or private?

Respondent: It's a public

Interviewer: please for how long have you been teaching?

Respondent: 3 years

Interviewer: Please what's your qualification?

Respondent: Degree, first degree

Interviewer: So please do you and the children use hand sanitizer?

Respondent: We use it, we are having one there but for them, I will say no. We give them detol, we normally put detol and soap, so this is the bowl that they use, there is a bowl there. We put the water and we put the detol and the soap for them to wash their hands.

Interviewer: Please do you believe being in a public or private early childhood center affect the quality of the physical environment as well as the health and safety of the children? Maybe public is better, private, or private is better.

Respondent: For this one, I will give it to the private schools because for them, because they are taking their money, they are doing it for their own profit or something, they always make sure that these facilities, the equipment that they have there is in a good shape even as they were saying that when it comes to disinfectant or cleaning of the floor. My small girl will ask, mummy today, the teacher say that we should bring, tomorrow my teacher say that we should bring a brush or whatever our PE kits we are going to clean our classrooms but here, it is not like that. Here is not like that in our here but we will try our best when they go out for, at times we will be here and just supervising or watching them so if you see any child over playing or doing something that we end up to, then we draw their attention or call them to stop. But when it comes to the neatness, the supervision, the other good physical environment, I will give it to the private schools.

Interviewer: The public schools, why don't we have those things. Why are we not meeting the standard?

Respondent: You see as I said, the public school, they do it for the, they have the money for their own interest and they want their school to be in a good, in a particular, they set standards for themselves. They make sure that they will

bring all these things to get that standard that they want but in public schools as I said early on, the capitation, everything is on capitation, capitation, capitation, we can do it but we are pushing everything to the government. The parents, this children here, we can even tax a parent to pay at least, 10 10 cedis, we want to do this. Look at the environment, we want to buy cement to do something but the parents will not do it. Even if you go to a school and say that we don't even have chalk, this thing we can just tax the children, 1 1 cedis, we will use it to buy the chalk but everything we want to wait for government.

Interviewer: And the private schools they will pay

Respondent: They will pay, they have been paying. This is the challenge. And the other time a man came here, it was a PTA meeting we organized and the man was asking how many of teachers have their wards here and I told him, me I don't have my ward here. We are not bringing them here because if there is something that we all want to buy, I bought expensive books for my daughter. I tell you to buy, you will tell me that you don't have money, we have some children that they are not using text books, we have numbered the tables it is four tables, some of the children they do not have textbooks they won't buy the parents are not buying the textbooks for the children so I told the man that it is not good. If I tell you the number of books I buy for my children, you won't buy, close to 600 cedis, the PE kits will come, the Friday wear will come, so I told him and he was quiet. The government said he will provide, even if it is free, there may the need to improve or do other things, the parents should just be ready come on board and help but when you say it, they will not do it.

Interviewer: Do you believe that a teacher's qualification will determine how well he will take care of these children not in terms of taking care of children, like if you have master's, degree will it determine how well you take care of them?

Respondent: I always say that teaching is a skill that we need to, so even if, I know a teacher I don't want to say. Even if you have this master's or PhD and you don't know how to, you don't have the technical knowhow, no matter what you can't teach them especially when it comes to a these people so it is a skill.

Interviewer: You were coming to talk about a teacher that you know.

Respondent: I will not, I will not, he is very good, he knows everything but when it comes to delivery, it is a problem. The person has the certificate alright but when it comes to the delivery.

Interviewer: So you are saying that it is not necessarily your certificate that will determine?

Respondent: Yea Interviewer: Thank you very much Respondent: You are welcome

Respondent 6

Time: 11:00am at the school. Date: 17/11/2017 13:36

Interviewer: Madam please good afternoon

Respondent: Good afternoon

Interviewer: Please your age are you under 35 or above?

Respondent: 35 years

Interviewer: Please this center is it day, is it public or private?

Respondent: It's private

Interviewer: Please for how long have you been working in early childhood center?

Respondent: 9 years

Interviewer: Please what's your qualification?

Respondent: Diploma student

Interviewer: Please how is it easy for you to use hand sanitizer?

Respondent: Here we don't have some but one of the kids, some of them, they have it in their bags so after washroom, they use it. But for the school generally, we don't have some for the class so we normally use soap and water to wash our hands.

Interviewer: When it comes to pre-school, do you believe that a teacher's qualification will determine how good the teacher will take care of the children?

Respondent: Yes because if the teacher has no training about what he or she is doing, it will not help the child, if they have the training, you have gone through some process before you take the child, it will help the teacher.

Interviewer: Please do you believe that early childhood center, if it is public or they are private, their physical environment will be different do you think.....?

Respondent: It will not look different because they are all in early childhood centers, it won't look different, but in Ghana here, due to one or two things, the private school will get more things than the government school because for the private, it is somebody's business that the person is doing but with the government, this one is not for me, it is for the government so everything that I like, I will do but for the private, everything will be going on well so it shouldn't be different but due to one or two reasons that you will see some difference in them.

Interviewer: Thank you very much for the interview... I'm grateful **Respondent:** You are welcome

Respondent 7

Time: 6:00pm at her house. Date: 17/11/2017 13:41

Interviewer: Good evening madam.

Respondent: Good evening.

Interviewer: Please is your age below or above 35 years?

Respondent: Below 35 years.

Interviewer: Please where you teach, is it a public center or private center?

Respondent: It is a private center.

Interviewer: Please how long have teach in a day care center?

Respondent: I came from a certain place...but I have taught for 6years now in this school.

Interviewer: You said you came from a certain place....is it a day care center?

Respondent: Yes please.

Interviewer: How many years did you spend in that day care center?

Respondent: I spent 4 years there.

Interviewer: Please what is your qualification?

Respondent: Please, early childhood.

Interviewer: Is it easy for both teachers and children to use hand sanitizer in this school?

Respondent: Is easy but we do not have hand sanitizers in this school. If I am using some and a child is standing by, I will give the child some to use. However, we do not have some in our center so we do not use hand sanitizers. Interviewer: Please why do you not have hand sanitizers?

Respondent: If you ask for hand sanitizer, the school will give you soap instead. They will tell you to use it for the mean time. If things work well, we

will buy the hand sanitizers for you. Insufficient fund is the main problem.

Interviewer: Comparing private and public day care center, which is better in terms of the physical environment and meeting the health and safety need of the children?

Respondent: I think private center is better than public center.

Interviewer: Why do you think so?

Respondent: For the private, because it is their business, they are really committed to the growth of the school and the services rendered. They really pay attention to the health and safety needs of the children. If you make a mistake that will end a child to be hurt, the school will not take it lightly with you. This makes it better than the public day care centers.

Interviewer: Please do you believe that having a higher educational qualification determines how good a teacher will take care of the children?

Respondent: I am not sure... for instance, I am parent myself and besides, I do not have a very higher academic qualification. Yet I take good care of the

students. I don't think having a higher educational qualification will guarantee a day care teacher's effectiveness of taking good care of the children. You have to be committed and selfless to serve. You have to know that you will reap the benefits in some future days.

Respondent: Thank you very much for interviewing me then. **Interviewer:** Thank you too.

Respondent 8

Time: 12:40pm at the school. Date: 20/11/2017 42:00

Interviewer: Madam please good afternoon

Respondent: Good afternoon

Interviewer: please your age are you under 35 or above 35?

Respondent: Above

Interviewer: Please this your center is it public or private?

Respondent: Public

Interviewer: Please for how long have you been teaching?

Respondent: 10 years

Interviewer: Please what's your qualification, degree, diploma, SHS?

Respondent: Now a degree holder

Interviewer: When it comes to the use of hand sanitizer, how easy is it for you and the children to use hand sanitizer?

Respondent: We don't use hand sanitizer, we practice hand washing, so we've introduced the children to hand washing in the whole school to all of these children and in every class, each subject have the topics that discuss about healthy habit so through that too we taught the children how to practice those things so from time all you know, maybe by this time their hands are dirty we help them out, we wash their hands one by one, at times we tell when they are coming to eat they have to wash their hands because we know children are very curious. The hand sanitizer is used for sanitizing the hands but a child may not be aware or may mistakenly put it into the mouth so it may bring crisis so we don't practice it.

Interviewer: Please do you believe that being public early childhood center or private center, it will determine how the quality of the environment will be, is public better that private early childhood center?

Respondent: For the physical environment, we will say the private is better, its far better than the public. Like I said earlier that in the public schools, everything is based on the government so its only concern parents that will come to our aid but for those who say, it is free education, they say we should go to school that we won't pay anything, they won't pay anything. I have a case, there is a boy who bought somebodies dress, a child not a boy, came to

school himself with no buttons, shabby dressing, we entertain him for two weeks because I came to hear that the mother said wasn't aware when the child was coming to school we sent a message that she should follow up and she didn't come and the child was still coming and I gave a warning that she should tell the mother that if she is not ready to come, the child should stay in the house so for about a week, the child was not coming. They think maybe I've forgotten what I was saying so today the boy came, with the same thing so I sent the boy outside and I called the one who brought him that he should take him to the house, I reported him to the headmistress, they say he should take him to the house so the boy later came to tell me that they are going to have a class test just after first break so he beg me, the madam said he should come and plead so I will him to write and I said "did you tell the teacher I told you earlier on"?, he said yes he told her then you go and write...

Interviewer: Do you believe that a teacher with high qualification will determine how good he take care of these children?

Respondent: No, no

Interviewer: It is not about qualification like if you have masters you can take care of the children?

Respondent: It is not about qualification. These children are been handled with somebody who has experience, mother who understand children and all that. If you look at qualification, it wouldn't help because somebody will have the necessary qualification they even have the masters in early childhood but a person may not be qualified to be at pre-school at the KG level because we have born teachers and we have trained teachers, born teachers will go to the depths and let the children become what he or she want to become but trained teachers at times when they don't have that spirit of guiding and leading children, it will get to somewhere you will give up, then the child becomes reluctant in the classroom. At times what the child does, the teacher doesn't care because they have made up their mind that nothing can be done about it but psychologists have told us that no child is tabula rasa so out of that thousand children that are able to well and that only child that cannot do well, within him or her, there is something that maybe the teacher cannot identify because he or she is not using the right channel to be able to get what the child needs and I have an example of that child in my class. He has stayed in KG one for three consecutive times, counting nil, reciting alphabetical letters nil, but he is able to draw and draw well so if you build on that, he will either become an artist.

Interviewer: Thank you, thank you very much, I'm grateful

APPENDIX N

SPSS Analysis Outputs for Research Question 1

GET

FILE='C:\Users\user\Desktop\My Threat Data\ECCD Physical Environments 2 modified.sav'. DATASET NAME DataSet1 WINDOW = FRONT. FREQUENCIES VARIABLES= SublRatingPlanning BuildRating IndoSpaceRating OutdoorSRating /STATISTICS=STDDEV MEAN /ORDER=ANALYSIS.

Frequencies

| | Statistics | | | | | | | | |
|----------------|------------|------------------------|------|---------------|------------------------|--------|-----|---------------|--|
| | | Sub1 Rating Building a | | Building as a | ding as a Indoor Space | | e | Outdoor Space | |
| | | | | Whole Rating | | Rating | | Rating | |
| N | Valid | | 160 | 16 | 50 | | 60 | 160 | |
| IN | Missing | | 0 | | 0 | | 0 | 0 | |
| Mean | | | 1.59 | 2.6 | 51 | 2 | .40 | 2.29 | |
| Std. Deviation | | | .530 | .75 | 53 | | 933 | .677 | |

Frequency Table

| | Sub1 Rating | | | | | | | | |
|-------|------------------|-----------|---------|---------------|-----------------------|--|--|--|--|
| | 4 | Frequency | Percent | Valid Percent | Cumulative Percent | | | | |
| | 0.00-1.00 = Poor | 68 | 42.5 | 42.5 | 42.5 | | | | |
| Valid | 1.01-2.00 = Fair | 89 | 55.6 | 55.6 | 98.1 | | | | |
| | 2.01-3.00 = Good | 3 | DBIS1.9 | 1.9 | 100.0 | | | | |
|] | Total | 160 | 100.0 | 100.0 | | | | | |

Building as a Whole Rating

| | | Frequency | Percent | Valid Percent | Cumulative |
|-------|-----------------------|-----------|---------|---------------|------------|
| 100 | | | | | |
| | 1 01-2.00 = Fair | 89 | 55.6 | 55.6 | 55.6 |
| | 2.01-3.00 = Good | 45 | 28.1 | 28.1 | 83.8 |
| Valid | 2.01-4.00 = Excellent | 26 | 16.3 | 16.3 | 100.0 |
| | | 160 | 100.0 | 100.0 | |

| | | | rung | | |
|-------|-----------------------|---------------------|-------|---------------|------------|
| | | Frequency Percent V | | Valid Percent | Cumulative |
| | | | | | Percent |
| | 0.00-1.00 = Poor | 25 | 15.6 | 15.6 | 15.6 |
| | 1.01-2.00 = Fair | 71 | 44.4 | 44.4 | 60.01 |
| Valid | 2 01-3.00 = Good | 20 | | 44.4 | 60.0 |
| Valid | 2.0.0000000000 | 39 | 24.4 | 24.4 | 84.4 |
| | 3.01-4.00 = Excellent | 25 | 15.6 | 15.6 | 100.0 |
| | Total | 160 | 100.0 | 100.0 | |

Indoor Space Rating

Outdoor Space Rating

| 1 | | Frequency | Percent | Valid Percent | | Cumulative Percent |
|-------|--------------------------------|-----------|---------|---------------|-------|-----------------------|
| | 0.00-1.00 = Poor | 15 | 9.4 | 3 | 9.4 | 9.4 |
| | 1.01-2.00 = Fair | 89 | 55.6 | | 55.6 | 65.0 |
| Valid | 2.01-3.00 = Goo <mark>d</mark> | 51 | 31.9 | | 31.9 | 96.9 |
| | 3.01-4.00 = Excellent | 5 | 3.1 | | 3.1 | 100.0 |
| | Total | 160 | 100.0 | | 100.0 | |

DESCRIPTIVES VARIABLES=SublRatingPlanning Sub2Rating Sub3Rating Sub4Rating Sub5Rating Sub6Rating Sub7RatingSub8RatingSub9Rating Sub10Rating Sub11Rating Sub12Rating/STATISTICS=MEAN STDDEV MIN MAX.

Descriptives

| Descriptive Statistics | | | | | | | | |
|------------------------|-----|---------|---------|------|----------------|--|--|--|
| | N | Minimum | Maximum | Mean | Std. Deviation | | | |
| Sub1 Rating | 160 | 1 | 3 | 1.59 | .530 | | | |
| Sub2 Rating | 160 | 1 | 4 | 2.53 | .938 | | | |
| Sub3 Rating | 160 | 1 | 4 | 2.49 | .777 | | | |
| Sub4 Rating | 160 | 1 | 4 | 2.02 | 1.146 | | | |
| Sub5 Rating | 160 | 1 | 4 | 2.28 | 1.127 | | | |
| Sub6 Rating | 160 | 1 | 4 | 2.60 | .762 | | | |
| Sub7 Rating | 160 | 1 | 4 | 2.53 | .964 | | | |
| Sub8 Rating | 160 | 1 | 4 | 2.06 | 1.140 | | | |
| Sub9 Rating | 160 | 1 | 4 | 2.08 | .911 | | | |
| Sub10 Rating | 160 | 1 | 4 | 1.90 | .656 | | | |
| Sub11 Rating | 160 | 1 | 4 | 1.84 | .846 | | | |
| Sub12 Rating | 160 | 2 | 4 | 2.95 | .581 | | | |
| Valid N (listwise) | 160 | | | | | | | |

FREQUENCIES VARIABLES=SublRatingPlanning Sub2Ratigers of Sub4Ratiegers Sub1Rating Sub1Rating Sub1Rating Sub10Rating Sub10Rating Sub12Rating/STATISTICS=STDDEV MEAN/ORDER=ANALYSIS.

Frequency Table

| | Sub1 Rating | | | | | | | |
|-------|------------------|-----------|---------|---------------|------------|--|--|--|
| | | Frequency | Percent | Valid Percent | Cumulative | | | |
| | 0.00-1.00 = Poor | 68 | 42.5 | | Percent | | | |
| | 1 01 2 00 - Eatr | | 42.5 | 42.5 | 42.5 | | | |
| Valid | 1.01-2.00 = Fair | 89 | 55.6 | 55.6 | 98.1 | | | |
| | 2.01-3.00 = Good | 3 | 1.9 | 19 | 100.0 | | | |
| | Total | 160 | 100.0 | 100.0 | 100.0 | | | |

Sub2 Rating

| | N | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|--------------------------------|-----------|---------|---------------|-----------------------|
| | 0.00-1.00 = Po <mark>or</mark> | 25 | 15.6 | 15.6 | 15.6 |
| | 1.01-2.00 = Fair | 50 | 31.3 | 31.3 | 46.9 |
| Valid | 2.01-3.00 = Good | 60 | 37.5 | 37.5 | 84.4 |
| | 3.01-4.00 = Excellent | 25 | 15.6 | 15.6 | 100.0 |
| | Total | 160 | 100.0 | 100.0 | |

Sub3 Rating

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----------------------|-----------|----------|---------------|-----------------------|
| | 0.00-1.00 = Poor | 6 | 3.8 | 3.8 | 3.8 |
| | 1.01-2.00 = Fair | 91 | 56.9 | 56.9 | 60.6 |
| Valid | 2.01-3.00 = Good | 41 | BIS 25.6 | 25.6 | 86.3 |
| | 3.01-4.00 = Excellent | 22 | 13.8 | 13.8 | 100.0 |
| | Total | 160 | 100.0 | 100.0 | |

| | | Sub4 F | Rating | | |
|-------|-----------------------|-----------|---------|---------------|-----------------------|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| | 0.00-1.00 = Poor | 79 | 49.4 | 49.4 | 49.4 |
| | 1.01-2.00 = Fair | 23 | 14.4 | 14.4 | 63.8 |
| Valid | 2.01-3.00 = Good | 34 | 21.3 | 21.3 | 85.0 |
| | 3.01-4.00 = Excellent | 24 | 15.0 | 15.0 | 100.0 |
| | Total | 160 | 100.0 | 100.0 | |

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SAM JOMAH LIBRARY UNIVERSITY OF CAPE COAST

| | | Frequency | Percent | Valid Percent | Cumulative |
|-------|-----------------------|-----------|---------|---------------|------------|
| | 0.00.1.00 = Poor | | | | Percent |
| | 0.00 - 1.00 - Poor | 58 | 36.3 | 36.3 | 36.3 |
| | 1.01-2.00 = Fair | 27 | 16.0 | | 00.0 |
| | 2.01.2.00 - Good | | 10.9 | 16.9 | 53.1 |
| Valid | 2.01-3.00 - 6000 | 48 | 30.0 | 30.0 | 83.1 |
| | 3.01-4.00 = Excellent | 27 | 16.0 | 10.0 | 100.01 |
| | Total | | 10.5 | 16.9 | 100.0 |
| | | 160 | 100.0 | 100.0 | |

Sub6 Rating

| | | Frequency | Percent | Valid Percent | | Cumulative Percent |
|-------|-------------------------------------|-----------|---------|---------------|-------|-----------------------|
| | 0.00-1.00 = Poor | 1 | .6 | | .6 | .6 |
| | 1.01-2.00 = Fair 💦 | 88 | 55.0 | 14 | 55.0 | 55.6 |
| Valid | 2.01-3.00 = Good | 45 | 28.1 | 7 | 28.1 | 83.8 |
| | 3.01-4.00 = Exc <mark>ellent</mark> | 26 | 16.3 | | 16.3 | 100.0 |
| | Total | 160 | 100.0 | | 100.0 | |

| | | Sub7 H | ating | | |
|-------|-----------------------|-----------|---------|---------------|-----------------------|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| | 0.00-1.00 = Poor | 30 | 18.8 | 18.8 | 18.8 |
| | 1.01-2.00 = Fair | 39 | 24.4 | 24.4 | 43.1 |
| Valid | 2.01-3.00 = Good | 67 | 41.9 | 41.9 | 85.0 |
| | 3.01-4.00 = Excellent | 24 | 15.0 | 15.0 | 100.0 |
| | Total | 160 | 100.0 | 100.0 | |

Sub8 Rating

| | | Frequency | Percent | Valid Percent | Cumulative |
|-------|-----------------------|-----------|---------|---------------|------------|
| | | ,,, | | | Percent |
| | 0.00-1.00 = Poor | 75 | 46.9 | 46.9 | 46.9 |
| | 1.01.2.00 - Feir | 25 | 15.6 | 15.6 | 62.5 |
| | 1.01-2.00 = Fair | | 22.5 | 22.5 | 85.0 |
| Valid | 2.01-3.00 = Good | 50 | 15.0 | 15.0 | 100.0 |
| | 3.01-4.00 = Excellent | 24 | 10.0 | 100.0 | |
| | Total | 160 | 100.0 | 100.0 | |

| | | Frequency | Percent | Valid Percent | Cumulative |
|-------|-----------------------|-----------|---------|---------------|------------|
| | 0.00.1.00 = Poor | | | | Percent |
| | | 37 | 23.1 | 23.1 | 23.1 |
| | 1.01-2.00 = Fair | 96 | 60.0 | | 2011 |
| | 2.01.3.00 = Good | | 00.0 | 60.0 | 83.1 |
| Valid | 2.01-3.00 - 6000 | 4 | 2.5 | 2.5 | 85.6 |
| | 3.01-4.00 = Excellent | 23 | 14.4 | 14,4 | 100.0 |
| | Total | 160 | 100.0 | 100.0 | |

Sub10 Rating

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------------------------------------|-----------|---------|---------------|-----------------------|
| | 0.00-1.00 = Poor | 40 | 25.0 | 25.0 | 25.0 |
| | 1.01-2.00 = Fair | 99 | 61.9 | 61.9 | 86.9 |
| Valid | 2.01-3.00 = Good | 18 | 11.3 | 11.3 | 98.1 |
| | 3.01-4.00 = Exc <mark>ellent</mark> | 3 | 1.9 | 1.9 | 100.0 |
| | Total | 160 | 100.0 | 100.0 | |

| Sub11 Rating | | | | | | |
|--------------|-----------------------|-----------|---------|---------------|-----------------------|--|
| | | Frequency | Percent | Valid Percent | Cumulative Percent | |
| | 0.00-1.00 = Poor | 71 | 44.4 | 44.4 | 44.4 | |
| | 1.01-2.00 = Fair | 45 | 28.1 | 28.1 | 72.5 | |
| Valid | 2.01-3.00 = Good | 43 | 26.9 | 26.9 | 99.4 | |
| | 3.01-4.00 = Excellent | 1 | .6 | .6 | 100.0 | |
| | Total | 160 | 100.0 | 100.0 | | |

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| | | Frequency | Percent | Valid Percent | Cumulative |
| | | | | | Percent |
| | | | | 40.4 | 10.4 |
| | 1 01-2 00 = Fair | 31 | 19.4 | 19.4 | 19.4 |
| | 1.01 2.00 1 4. | | 66.2 | 66.3 | 85.6 |
| | 2.01-3.00 = Good | 106 | 00.3 | 00.0 | |
| Valid | | 22 | 14.4 | 14.4 | 100.0 |
| | 3.01-4.00 = Excellent | 23 | | | |
| | | 160 | 100.0 | 100.0 | |
| 1000 | Total | 100 | | | |

GET

FILE='C:\Users\user\Desktop\My Threat Data\ECCD Physical

Environments 2 modified say Coase Co

/STATISTICS=MEAN STDDEV MIN MAX.

Descriptives

[DataSet1] C:\Users\Salomey\Desktop\My Threat\My Threat Data

\ECCD Physical Environments 2 modified.sav

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---------------------|-----|---------|---------|--------|----------------|
| Overall CPERS Score | 160 | .93 | 3.44 | 1.8771 | .77352 |
| Valid N (listwise) | 160 | | | | |

Descriptive Statistics



© University of Cape Person DIX 0:://ir.ucc.edu.gh/xmlui

NVivo Analysis Output for Research Question 1

12/03/2018 14:57

Coding Summary By Node

Play Yard Space 12/03/2018 14:57

| AggregateClassificationC | overag | eNumber Of References | CodingReference Number | Coded Initials | ByModified On |
|---|--------|--------------------------|---------------------------|-------------------|---------------|
| Nodes\\Open end | ed re | sponses\\Pla | y Yard Spaces\A | ll work a | nd no Play |
| Dataset | | | | | |
| nternals\\Play Yai | rds | | | | |
| ′es 0 | .0782 | 6 | | | |
| iside their playing outsid | e | e | 1.00 | SAE | 11/03/2018 |
| They can only sit for a ver | γ smal | l minutes. The res | 2 t must be a play. | SAE | 11/03/2018 |
| while they are playing | R | | 3 | SAE | 11/03/2018 |
| n an the mark the state of the transmission of the state | 23 | | 4 | SAE | 11/03/2018 |
| o I think it is very import | ant to | provide a playing | ground for the kids to p | olay | ** ** |
| | | 50 | 5 | SAE | 11/03/2018 |
| while they are playing | | | VOBIS | | ** ** |
| Constant of the constant of the second | | | 6 | SAE | 11/03/2018 |
| fea as the saying goes all | worka | and no play makes | i Jack a dull boy, | | |
| Nodes\\Open end | ed re | sponses\\Pla | y Yard Spaces\Le | earning C |)utdoors |
| Dataset | | | | | |
| Internals\\Play Ya | rds | 8 | | | |
| | | | 1 | SAE | 11/03/2018 |
| they also learn outside | | | 2 | SAE | 11/03/2018 |

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| 12/03/2018 | 14:57 |
|------------|-------|
|------------|-------|

Coding Summary By Node

Play Yard Space 12/03/2018 14:57

| AggregateClassificationCoverage | geNumber Of Codings References | Reference Number | Coded Initials | ByModified On |
|------------------------------------|-----------------------------------|---------------------|-------------------|---------------------|
| Vodes\\Open ended re | sponses\\Play Yard | Spaces\All v | work and | d no Piay |
| Dataset | | | | |
| nternals\\Play Yards | | | | |
| res 0.0782 | 6 | | | |
| | | 1 | SAE | 11/03/2018 |
| aside their playing outside | - Fri | | | 18:26 |
| | | 2 | SAE | 11/03/2018 |
| They can only sit for a very sma | ll minutes. The rest must be | a play. | | 18:27 |
| | | 3 | SAE | 11/03/2018 |
| while they are playing | | | | 18:28 |
| | | 4 | SAE | 11/03/2018 18·29 |
| So I think it is very important to | provide a playing ground fo | r the kids to play | Y | 10123 |
| | NOBIS | 5 | SAE | 11/03/2018 18:30 |
| while they are playing | | 6 | SAE | 11/03/2018 18:36 |
| Yea as the saying goes all work | and no play makes Jack a du | ill boy, | | ara (n - 1 |
| Nodos) \Onen ended r | osponses\\Play Yard | Spaces\Lea | rning Ou | Itdoors |
| Deteret | coholiono / // my - er u | - | | |
| Dataset Internals\\Dlay Varde | | | | |
| Yes 0.1181 | 8 | 1 | SAE | 11/03/2018 18:26 |
| they also learn outside | | | | 10.20 |
| | | | | |

| environment should help them learn while the | 2 y are playing | SAE | 11/03/2018 18:28 |
|--|--------------------|-----|---------------------|
| | 3 | SAE | 11/03/2018 |
| it really help them to learn very fast | | | 18:29 |
| | | | |

Reports\\Coding Summary By Node Report

Page 3 of 5

12/03/2018 14:57

| Aggregate Classification Coverage Number Of References | CodingReference Number | e Coded Initials | ByModified On |
|---|---------------------------|---------------------|------------------------------|
| | 4 | SAE | 11/03/2018 |
| They learn through play | | | 18:29 |
| | 5 | SAE | 11/03/2018 |
| children learn through playing | | | 18:30 |
| | 6 | SAE | 11/03/2018 |
| they are learning | | | 18:30 |
| | 7 | SAE | 11/03/2018 |
| children learn through playing | | | 16.55 |
| X | 8 | SAE | 11/03/2018 |
| they learn as they play | | J.F. | |
| Nodes\\Open ended responses\\Play | Yard Spaces | Up Keep | |
| Dataset NOB Internals\\Play Yards | | | |
| Yes 0.1697 7 | | | |
| | 1 | SAE | 11/03/2018 18:30 |
| socialization | | | |
| | 2 | SAE | 11/03/2018 18:32 |
| there should be a little out game program so that th | ey are mind will r | est for a while | |
| | 3 | SAE | 11/03/2018 1 8 :32 |
| There should be playing grounds so that when they | learn, their mind | will get settled | |

| omething like a slide fo | or children to actually study as | 4 | SAE | 11/03/2018 18:34 |
|--|--|---|-----------------------------------|--|
| - | | it helps them with th | eir physical | ability |
| having an outdoor equi | pment for children to play pla | 5 | SAE | 11/03/2018 18:35 |
| | | ys a major role for th | eir upkeep | |
| they have to come out a | and enjoy a bit of sunshine | 6 | SAE | 11/03/2018 18:38 |
| Reports\\Codin | ig Summary By Node Report | | | Page 4 of 5 |
| | | | | 12/03/2018 14:57 |
| Aggregate Classificatio | n Coverage Number Of References | CodingReference Number | Coded Initials | ByModified On |
| | | 7 | SAE | 11/03/2018 18:39 |
| providing outdoor space | e for them to maneuver and p | blay, stretching their l | egs is very v | ery important |
| Reports\\Codir | ng Summary By Node Report | | | Page 5 of 1 |
| | Coding Sum | nary By Node | | 12/03/2018 14:4 |
| | Challenges w | ith Equipment | | |
| | 12/03/2 | 018 14:47 | | |
| 'Aggregate Classificatio | n Coverage Number Of | CodingReference | Coded | By Modified On |
| ABBICBULC CHASHINGTHE | References | Number | Initials | |
| | 11.01 | | | |
| Nodes\\Open er Dataset Internals\\Equip Yes | nded responses\\Chai iment 0.2089 8 ave to spend some money to t | lenges with Play 1 try and build up some | y Equipm SAE e things for f | 11/03/2018 19:03 them to use. |
| Nodes\\Open er Dataset Internals\\Equip Yes If we want them we ha | nded responses\\Chai ument 0.2089 8 ave to spend some money to t | lenges with Play 1 try and build up some | y Equipm SAE e things for t | 11/03/2018 19:03 them to use. |
| Nodes\\Open er Dataset Internals\\Equip Yes If we want them we ha | nded responses\\Chai ument 0.2089 8 ave to spend some money to t | lenges with Play 1 try and build up some 2 | SAE SAE things for t SAE | 11/03/2018 19:03 them to use. 11/03/2018 19:04 |
| Nodes\\Open er Dataset Internals\\Equip Yes If we want them we ha The capitation grants t | nded responses\\Chai ument 0.2089 8 ave to spend some money to t too we use it for other equally | lenges with Play 1 try and build up some 2 r Important things | SAE SAE things for t SAE | 11/03/2018 19:03 them to use. 11/03/2018 19:04 |

| | - t | SAE | 11/03/2018 19:05 |
|--|---|--|--|
| | e, from the parents or from the | head | 13.03 |
| getting enough money to provide this t | 4 hing is very difficult | SAE | 11/03/2018 19:06 |
| | S | SAE | 11/03/2018 19:13 |
| eplacing it is quite a challenge because | e it Is expensive | | |
| | 6 | SAE | 11/03/2018 19:14 |
| is the funds, the funds | | | |
| e do tell the head about they getting | 7 | SAE | 11/03/2018 19:15 |
| a to the cost of t | | | noney |
| ne capitation cannot capture so, in fac | 8 It, it is problem. | SAE | 11/03/2018 19:15 |
| Reports\\Coding Summary By No | ode Report | | Page 2 of |
| | | | 12/03/2018 14:4 |
| ggregate Classification Coverage Nu | umber Of CodingReference | e Coded | ByModified On |
| Re | ferences Number | Initials | |
| lodes\\Openended | responses\\Challe | anges | |
| | | | with Pla |
| Equipment\Government Dataset | | | with Pia |
| Equipment\Government Dataset nternals\\Equipment /es 0.0835 4 | NOBIS | | with Pla |
| Equipment\Government Dataset nternals\\Equipment Yes 0.0835 4 | NOBIS | SAE | 11/03/2018 19:02 |
| Equipment\Government Dataset nternals\\Equipment Yes 0.0835 4 | NOBIS 1 52 | SAE | WITH PI2 11/03/2018 19:02 11/03/2018 19:03 |
| Equipment\Government Dataset nternals\\Equipment 'es 0.0835 4 'he office doesn't provide those things | NOBIS | SAE SAE SAE | WITH PI2 11/03/2018 19:02 11/03/2018 19:03 11/03/2018 |
| Equipment\Government Dataset nternals\\Equipment es 0.0835 4 The office doesn't provide those things the covernment wants to come in, si | NOBIS 1 5 2 3 he will consider the classrooms | SAE SAE SAE first and not th | WITH PI2 11/03/2018 19:02 11/03/2018 19:03 11/03/2018 19:04 19:05 10:04 19:05 10:04 10:05 |
| Equipment\Government Dataset nternals\\Equipment 'es 0.0835 4 'he office doesn't provide those things f the government wants to come in, si | NOBIS 1 5 2 3 the will consider the classrooms 4 | SAE SAE SAE first and not th SAE | WITH PI2 11/03/2018 19:02 11/03/2018 19:03 11/03/2018 19:04 te playing ground 11/03/2018 19:06 |
| Equipment\Government Dataset Internals\\Equipment es 0.0835 4 The office doesn't provide those things t seems government wants to come in, si t seems government should supply all | 1 s 2 3 he will consider the classrooms 4 I these things. Once it is a gove | SAE SAE SAE first and not th SAE rnment school, | With Piz 11/03/2018 19:02 11/03/2018 19:03 11/03/2018 19:04 ne playing ground 11/03/2018 19:06 1 think they should |
APPENDIX P

SPSS Analysis Outputs for Research Question 2

FREQUENCIES VARIABLES=HSPolicy13 Immunization15 SickRecords16 DocNotes17 HWPost18/ORDER=ANALYSIS.

Frequency Table

Health and safety policy

| | | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|---------------------------|--------------|-----------|---------|---------------|-----------------------|
| | Does Not Com Standard | pletely Meet | 30 | 18.8 | 18.8 | 1 8 .8 |
| Valid | Completely Me Standard | ets | 130 | 81.3 | 81.3 | 100.0 |
| | Total | 6 | 160 | 100.0 | 100.0 | |

| | Immur | nization reco | rds up to da | ite | |
|-------|--------------------------------------|---------------|--------------|---------------|-----------------------|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| | Does Not Completely Meet Standard | 22 | 13.8 | 13.8 | 13.8 |
| Valid | Completely Meets Standard | 138 | 86.3 | 86.3 | 100.0 |
| | Total | 160 | 100.0 | 100.0 | |

Records of sick children

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|--------------------------------------|-----------|---------|---------------|-----------------------|
| | Does Not Completely Meet Standard | 39 | 24.4 | 24.4 | 24.4 |
| Valid | Completely Meets Standard | 121 | 75.6 | 75.6 | 100.0 |
| | Total | 160 | 100.0 | 100.0 | |

| | | | o on sick (| sillaren | |
|-------|--------------------------|-----------|-------------|---------------|------------|
| | | Frequency | Percent | Valid Percent | Cumulative |
| | Deep Net O | | | | Percent |
| | Does Not Completely Meet | | | | |
| | Standard | 99 | 61.9 | 61.9 | 61.9 |
| Valid | Completely Meets | | | | |
| | Standard | 61 | 38.1 | 38.1 | 100.0 |
| | Total | 160 | 100.0 | 100.0 | |

Records of doctor's notes on sick children

Handwashing procedures posted

| | | Frequency | Percent | Valid Percent | Cumulative |
|-------|-------------------------|-----------|---------|---------------|------------|
| | | | | - | Percent |
| | Does Not Completely Mee | | | | |
| | Standard | 41 | 25.6 | 25.6 | 25.6 |
| Valid | Completely Meets | | | | |
| | Standard | 119 | 74.4 | 74.4 | 100.0 |
| | Total | 160 | 100.0 | 100.0 | |

FREQUENCIES VARIABLES=HSObservel Sanitizer4 NewFoods7 Site10Disinfectants11 ToySafe12 Items13 ToyDisinfect14 Glove15 Strings16 SmallObjects17 Supervise18/ORDER=ANALYSIS.

Frequency Table

| | Observation of Children | | | | | | | |
|-------|--------------------------------------|-----------|---------|---------------|-----------------------|--|--|--|
| | 75 | Frequency | Percent | Valid Percent | Cumulative Percent | | | |
| | Does Not Completely Meet Standard | 25 | 5.4 | 5.4 | 5.4 | | | |
| Valid | Completely Meets Standard | 437 | 94.6 | 94.6 | 100.0 | | | |
| | Total | 462 | 100.0 | 100.0 | | | | |

| | | Frequency | Percent | Valid Percent | Cumulative | |
|-------|--------------------------|-----------|---------|---------------|------------|--|
| | Dees Not O | | | | Percent | |
| | Does Not Completely Meet | 4 ! | 1 ' | | | |
| | Standard | 230 | 49.8 | 49.8 | 49.8 | |
| Valid | Completely Meets | ' | | | | |
| | Standard | 232 | 50.2 | 50.2 | 100.0 | |
| L | Total | 462 | 100.0 | 100.0 | | |

Use of hand sanitizers

Children encouraged to try new foods

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|--|-----------|---------|---------------|-----------------------|
| | Does Not Completely Meet Standard | 101 | 21.9 | 21.9 | 21.9 |
| Valid | Completely Me <mark>ets</mark> Standard | 361 | 78.1 | 78.1 | 100.0 |
| | Total | 462 | 100.0 | 100.0 | |

Pest breeding areas

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|--------------------------------------|-----------|---------|---------------|-----------------------|
| | Does Not Completely Meet Standard | 86 | 18.6 | 18.6 | 18.6 |
| Valid | Completely Meets Standard | 376 | 81.4 | 81.4 | 100.0 |
| | Total | 462 | 100.0 | 100.0 | |

Floored cleaned with disinfectants

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|--------------------------------------|-----------|---------|---------------|-----------------------|
| | Does Not Completely Meet Standard | 64 | 13.9 | 13.9 | 13.9 |
| Valid | Completely Meets | 398 | 86.1 | 86.1 | 100.0 |
| | Standard Total | 462 | 100.0 | 100.0 | |

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|--------------------------------------|-----------|---------|---------------|-----------------------|
| | Does Not Completely Meet Standard | 58 | 12.6 | 12.6 | 12.6 |
| Valid | Completely Meets Standard | 404 | 87.4 | 87.4 | 100.0 |
| | Total | 462 | 100.0 | 100.0 | |

Toys and equipments safe

Sharing of personal items

| | | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------------------------------|----------|-----------|---------|---------------|-----------------------|
| | Does Not Complete Standard | ely Meet | 51 | 11.0 | 11.0 | 11.0 |
| Valid | Completely Meets Standard | | 411 | 89.0 | 89.0 | 100.0 |
| | Total | | 462 | 100.0 | 100.0 | |

Shared toys disinfected

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|--------------------------------------|--------------|---------|---------------|-----------------------|
| | Does Not Completely Meet Standard | 151 | 32.7 | 32.7 | 32.7 |
| Valid | Completely Meets Standard | NO B1 311 | 67.3 | 67.3 | 100.0 |
| | Total | 462 | 100.0 | 100.0 | |

Use of disposable gloves

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------------|--------------------------------------|-----------|---------|---------------|-----------------------|
| | Does Not Completely Meet Standard | 91 | 19.7 | 19.7 | 19.7 |
| Valid | Completely Meets | 371 | 80.3 | 80.3 | 100.0 |
| | Total | 462 | 100.0 | 100.0 | |

| | | | or reach of | children | |
|-------|--------------------------------------|-----------|-------------|---------------|------------|
| | | Frequency | Percent | Valid Percent | Cumulative |
| | | | | | Percent |
| - | Does Not Completely Meet Standard | 65 | 14.1 | 14.1 | 14.1 |
| Valid | Completely Meets Standard | 397 | 85.9 | 85.9 | 100.0 |
| | Total | 462 | 100.0 | 100.0 | |

Dangerous things are out of reach of children

Small dangerous items are out of reach

| | | | Frequency | Percent | Valid F | Percent | Cumulative |
|-------|----------------------------|-------------|-----------|---------|---------|---------------|------------|
| | | | | | 9 | | Percent |
| | Does Not Comp Standard | letely Meet | 72 | 15.6 | | 15.6 | 15.6 |
| Valid | Completely Mee Standard | ets | 390 | 84.4 | | 84.4 | 100.0 |
| | Total | | 462 | 100.0 | | 100. 0 | |

Children are actively supervised

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|--------------------------------------|-----------|---------|---------------|-----------------------|
| | Does Not Completely Meet Standard | 55 | 11.9 | 11.9 | 11.9 |
| Valid | Completely Meets Standard | N 0407 | 5 88.1 | 88.1 | 100.0 |
| | Total | 462 | 100.0 | 100.0 | l |

APPENDIX Q

NVivo Analysis Output for Research Question 2

12/03/2018 14:59

Coding Summary By Node

Reports from Doctors

12/03/2018 14:59

| Aggregate Classification Coverage Number Of | CodingReference | Coded | ByModifled On |
|--|--------------------|-------------|---------------------|
| References | Number | Initials | Symouth a off |
| Nodes\\Open ended responses\\Cen | tre requiring Do | octor's Rep | port\ |
| Dataset | | | |
| Internals\\Doctors Report | | | |
| Yes 0.2381 7 | | | |
| | | SAE | 11/03/2018 20:33 |
| Will they even send them to the hospital? | | | |
| | 2 | SAE | 11/03/2018 |
| we didn't even bother to ask | | | |
| | 3 | SAE | 11/03/2018 20:34 |
| you have sent your child to the hospital, what do w | ve have to ask. | X | |
| | 4 | SAE | 11/03/2018 20:28 |
| It is only in rare cases if the child has been away fo | r a very long time | | |
| | IOBI5 | SAE | 11/03/2018 20:29 |
| we don't ask for that so they don't | | | |
| | 6 | SAE | 11/03/2018 20:31 |
| Some of them even try to hide because their healt | h report | | |
| | 7 | SAE | 11/03/2018 20:32 |
| if the parent doesn't want to provide an information | on | | |
| Reports\\Coding Summary By Node Report | | | Page 2 |

| | Coding Sum | | | 12/03/2018 14:52 |
|-------------------------------------|------------------|-------------------------------|----------------------|---|
| | Hand C. | nmary By Node | | |
| | | hitizer Usage | | |
| Aggregate Classification Coverage | 12/03/ | 2018 14:52 | | |
| | References | CodingReference Number | Coded By Initials | y Modifled On 🤤 |
| Node Nodes\\Open and ad a | | | and address to an | and the second |
| noucs (topen ended res | ponses\\Usa | age of Hand Sani [,] | tizer\Expe | nsive |
| | | | | |
| Internais (Inand Sanitize | er Usage | | | |
| NO 0.1025 | 6 | | | |
| | | 1 | SAE | 10/03/2018 |
| but for the children because its | | | | 13:11 |
| but for the children, because it is | expensive the ch | ildren cannot afford. | | |
| | | 2 | SAE | 10/03/2018 |
| they said when they get anough | money | | | 13:16 |
| they said when they get enough | money | | | |
| | | 3 | SAE | 10/03/2018 |
| Possusa Lean't provide them | | | | 13:18 |
| because i can t provide them | | | 7 | |
| | | 4 | SAE | 10/03/2018 |
| the school too connet offerd it | | | | 13:18 |
| the school too cannot anord it | | | 12 | |
| | 4.0 | 5 | SAE | 10/03/2018 |
| If things work well, we will buy t | he hand sanitize | rs | | 13.23 |
| | | OBIS | | |
| | | 6 | SAE | 10/03/2018 |
| | | | | 13.25 |
| Insufficient fund is the main prol | olem. | | | Page 1 of |
| Keborts //Cooling Source A | by Node Report | | | |
| | | | | |
| Aggregate Classification Coverag | eNumber Of | CodingReference | Coded | By Modified On |
| | References | Number | Initials | a na sa ana ana ana ana ana ana ana ana |
| Nodes\\Open ended re | sponses\\U | sage of Hand Sar | nitizer\ | |
| Come Children Have | | | | |
| Some Uniforen nave | | | | |
| Internals/\Hand Sanitiz | er Usage | | | |
| meetingis ((righte series | - | | | |
| | | 315 | | |

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| lo | 0.0503 2 | | | |
|--------------|-------------------------|---|-----|---------------------|
| nost of them | even have the small one | 1 | SAE | 10/03/2018 13:17 |
| | | | | |
| | | 2 | SAE | 10/03/2018 |

Nodes\\Open ended responses\\Usage of Hand Sanitizer\Teachers Have Dataset

No 0.0557 5 10/03/2018 1 SAE 13:09 we as teachers we have one in our various bags 2 SAE 10/03/2018 13:17 I have one for my personal 10/03/2018 SAE 3 13:19 We (teachers) use it 10/03/2018 4 SAE 13:20 we are having one there SAE 10/03/2018 5 13:24 If I am using some Page 2 of 4 Reports\\Coding Summary By Node Report

Internals\\Hand Sanitizer Usage

| ggregateClassificati | Of Coverage N | | | 12/03/2018 14:5 |
|---|----------------------------------|---------------------------|----------------------|---------------------|
| | References | CodingReference Number | Coded By Initials | Modifled On |
| lodes\\Open e Dataset Internals\\Hand | d Sanitizer Usage | ge of Hand Sani | tizer\Wate | er and Soap |
| | | | | |
| ney use the water in | i the Jerri can bucket with soar | 1 | SAE | 10/03/2018 13:12 |
| vash their hands | | 2 | SAE | 10/03/2018 13:12 |
| | | 3 | SAE | 10/03/2018 13:15 |
| | | 4 | SAE | 10/03/2018 13:17 |
| hey use water | | | | |
| | 376 | 5 | SAE | 10/03/2018 13:17 |
| hey use, water and | soap | 6 | SAE | 10/03/2018 |
| but with soap | | | | 13.15 |
| | N | DBIS7 | SAE | 10/03/2018 13:19 |
| the class can use on | e soap | - | | |
| | | 8 | SAE | 10/03/2018 13:21 |
| we normally put de | tol and soap | 9 | SAE | 10/03/2018 13:21 |
| We put the water | | | | |
| | the same for them to wash t | 10 heir hands. | SAE | 10/03/2018 13:22 |
| we put the detol ar | nd the soap for them to wash t | | | |
| | | 11 | SAE | 10/03/2018 13:23 |

we normally use soap and water to wash our hands.

| 12 | SAE | 10/03/2018 | |
|--------------------------------------|--------------------------------|--|--|
| ne school will give you soap instead | | | |
| | | Page 3 of 4 | |
| | | 12/03/2018 14:52 | |
| odingReference Number | Coded By Initials | Modified On | |
| 13 | SAE | 10/03/2018 | |
| | | 13:25 | |
| | | | |
| | odingReference Number 13 | odingReference Coded By Number Initials 13 SAE | |

APPENDIX R

SPSS Analysis Outputs for Research Hypothesis 1

CROSSTABS

/TABLES=Auspices1 BY CPERSoverallRating /FORMAT=AVALUE TABLES /STATISTICS=CHISQ PHI /CELLS=COUNT ROW COLUMN TOTAL /COUNT ROUND CELL /BARCHART.

Crosstabs

Case Processing Summary

| | Cases | | | | | |
|---------------------------|-------|---------|---------|---------|-------|---------|
| | Valid | | Missing | | Total | |
| | 'N | Percent | N | Percent | Ň | Percent |
| Centre Auspices * overall | 153 | 100.0% | 0 | 0.0% | 153 | 100.0% |

| | | | 0.04 | overall | | Total |
|----------|----------|--------------------------------|---------------------|---------------------|--------------------------|--------|
| | | | 1.01-2.00 = Fair | 2.01-3.00 = Good | 3.01-4.00 = Excellent | |
| | | Count | 39 | 13 | 7 | 59 |
| | Public | Auspices | 66.1% | 22.0% | 11.9% | 100.0% |
| 0.1 | | % within overall % of Total | 43.8% 25.5% | 31.7% 8.5% | 30.4% 4.6% | 38.6% |
| Auspices | | Count | 10 B1 S50 | 28 | 16 | 94 |
| | Drivate | % within Centre Auspices | 53.2% | 29.8% | 17.0% | 100.0% |
| | I IIVAIC | % within overall | 56.2% | 68.3% | 69.6% 10.5% | 61.4% |
| | | % of Total Count | 32.7% | 41 | 23 | 153 |
| | | % within Centre | 58.2% | 26.8% | 15.0% | 100.0% |
| Total | | % within overall | 100.0% | 100.0% | 100.0% 15.0% | 100.0% |
| | | % of Total | 30.270 | 20.070 | 141575 | - |

Centre Auspices * overall Crosstabulation

| Chi-Square Tests | | | | | | | |
|--------------------|--------|----|----------|--|--|--|--|
| | Value | df | Asymp. | | | | |
| | | | Sig. (2- | | | | |
| | | | sided) | | | | |
| Pearson Chi-Square | 2.493ª | 2 | 200 | | | | |
| Likelihood Ratio | 2 520 | 2 | .200 | | | | |
| Linear-by-Linear | 2.020 | 2 | .284 | | | | |
| Association | 2.153 | 1 | .142 | | | | |
| N of Valid Cases | 153 | | | | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 8.87.

CROSSTABS

/TABLES=Auspices1 BY HSPolicy13 Immunization15 SickRecords16 DocNotes17 HWPost18

/FORMAT=AVALUE TABLES

/STATISTICS=CHISQ PHI

/CELLS=COUNT ROW COLUMN TOTAL

/COUNT ROUND CELL

/BARCHART.

Case Processing Summary

| NOBIS | Cases | | | | | |
|--|--------|---------|---|---------|-------|---------|
| | \ \ | Valid | N | lissing | Total | |
| | N | Percent | N | Percent | N | Percent |
| Centre Auspices * Health and safety policy | 160 | 100.0% | 0 | 0.0% | 160 | 100.0% |
| Centre Auspices * Immunization records up to date | 160 | 100.0% | 0 | 0.0% | 160 | 100.0% |
| Centre Auspices * Records of sick children | 160 | 100.0% | 0 | 0.0% | 160 | 100.0% |
| Centre Auspices * Records of doctor's notes on sick children | 160 | 100.0% | 0 | 0.0% | 160 | 100.0% |
| Centre Auspices * Hand washing procedures posted | 160 | 100.0% | 0 | 0.0% | 160 | 100.0% |

Centre Auspices * Health and safety policy

| | | | Crosstab | | | | | |
|-------------------------------|---------|--------------------------------------|--------------------------------------|------------------------------|--------------|--|--|--|
| | | | Health and sa | Health and safety policy | | | | |
| | | Count | Does Not Completely Meet Standard | Completely Meets Standard | | | | |
| | | % within One | 14 | 45 | 59 | | | |
| Public | Public | Auspices | 23.7% | 76.3% | 100.0% | | | |
| Operation | | % Within Health and safety policy | 46.7% | 34.6% | 36.9% | | | |
| Centre Auspices Private | | % of Total | 8.8% | 28.1% | 36.9% | | | |
| | | Count | 16 | 85 | 101 | | | |
| | Private | % within Centre Auspices | 15.8% | 84.2% | 100.0% | | | |
| | | % within Health and safety policy | 53.3% | 65.4% | 63.1% | | | |
| | | % of Total Count | 10.0% | 53.1% 130 | 63.1% 160 | | | |
| Total | | % within Centre Auspices | 18.8% | 81.2% | 100.0% | | | |
| | | % within Health and safety policy | 100.0% | 100.0% | 100.0% | | | |
| | | % of Total | 18.8% | 81.2% | 100.0% | | | |

Chi-Square Tests

| JEFF | Value | df | Asymp. Sig. (2- sided) | Exact Sig. (2- sided) | Exact Sig. (1- sided) |
|------------------------------------|-------|----|---------------------------|--------------------------|--------------------------|
| Pearson Chi-Square | 1.521 | 1 | .217 | | |
| Continuity Correction ^b | 1.047 | 1 | .306 | | |
| Likelihood Ratio | 1.488 | 1 | .223 | | |
| Fisher's Exact Test | | | | .294 | .153 |
| Linear-by-Linear Association | 1.511 | 1 | .219 | | |
| N of Valid Cases | 160 | | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 11.06.

| Crosstab | | | | | | | | |
|----------|----------|---|---|------------------------------|--------|--|--|--|
| | | | Immunization reco | Total | | | | |
| | | Court | Does Not Completely Meet Standard | Completely Meets Standard | | | | |
| | | Count | 13 | 46 | 59 | | | |
| | Public | Auspices | 22.0% | 78.0% | 100.0% | | | |
| | | % within Immunization records up to date | 59.1% | 33.3% | 36.9% | | | |
| Centre | | % of Total | 8.1% | 28.8% | 36.9% | | | |
| Auspices | | Count | 9 | 92 | 101 | | | |
| | Private | % within Centre Auspices | 8.9% | 91.1% | 100.0% | | | |
| | . Invato | % within Immunization records up to date | 40.9% | 66.7% | 63.1% | | | |
| | | % of Total | 5.6% | 57.5% | 63.1% | | | |
| | | Count | 22 | 138 | 160 | | | |
| Total | | % within Centre Auspices | 13.8% | 86.2% | 100.0% | | | |
| TULAI | | % within Immunization records up to date | 100.0% | 100.0% | 100.0% | | | |
| | | % of Total | 13.8% | 86.2% | 100.0% | | | |

Centre Auspices * Immunization records up to date

Chi-Square Tests

| 4 PA | Value | df | Asymp. Sig. (2- sided) | Exact Sig. (2- sided) | Exact Sig. (1- sided) |
|------------------------------------|--------|----|---------------------------|--------------------------|--------------------------|
| Pearson Chi-Square | 5.408ª | 1 | .020 | | |
| Continuity Correction ^b | 4.358 | 4 | NOBIS .037 | | |
| Likelihood Ratio | 5.207 | 1 | .022 | | |
| Fisher's Exact Test | | | | .031 | .020 |
| Linear-by-Linear Association | 5.374 | 1 | .020 | | |
| N of Valid Cases | 160 | | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 8.11.

Centre Auspices * Records of sick children

| | | | Records of sid | Records of sick children | | | | |
|----------|---------|------------------|--------------------------------|--------------------------|--------|--|--|--|
| | | | Does Not Completely Completely | | | | | |
| | | | Meet Standard | Meets Standard | 2 | | | |
| | | Count | 16 | 43 | 59 | | | |
| | | % within Centre | | | | | | |
| | Public | Auspices | 27.1% | 72.9% | 100.0% | | | |
| l. | . abile | % within Records | | | | | | |
| | | of sick children | 41.0% | 35.5% | 36.9% | | | |
| Centre | | % of Total | 10.0% | 26.9% | 36.9% | | | |
| Auspices | | Count | 23 | 78 | 101 | | | |
| | | % within Centre | 1 | 10 | 101 | | | |
| | Private | Auspices | 22.8% | 77.2% | 100.0% | | | |
| | Theate | % within Records | - we | | | | | |
| | | of sick children | 59.0% | 64.5% | 63.1% | | | |
| | | % of Total | 14.4% | 48.8% | 63.1% | | | |
| | | Count | 39 | 121 | 160 | | | |
| | | % within Centre | | 7 | | | | |
| Totol | | Auspices | 24.4% | 75.6% | 100.0% | | | |
| TOLA | | % within Records | | | | | | |
| | | of sick children | 100.0% | 100.0% | 100.0% | | | |
| | 2 | % of Total | 24.4% | 75.6% | 100.0% | | | |

Crosstab

Chi-Square Tests

| | Value | df | Asymp. Sig. (2- sided) | Exact Sig. (2- sided) | Exact Sig. (1- sided) |
|------------------------------------|-------|----|---------------------------|--------------------------|--------------------------|
| Pearson Chi-Square | .382ª | 1 | .537 | | |
| Continuity Correction ^b | .182 | 1 | .669 | | |
| Likelihood Ratio | .378 | 1 | .539 | | |
| Fisher's Exact Test | | | | .570 | .332 |
| Linear-by-Linear | 370 | 1 | .538 | | |
| Association | .375 | ' | | | |
| N of Valid Cases | 160 | | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 14.38.

Centre Auspices * Records of doctor's notes on sick children

| Crosstab | | | | | | | | |
|----------|---------|---|---|------------------------------|--------|--|--|--|
| | | | Records of doctor childr | s notes on sick en | Total | | | |
| | | 0 | Does Not Completely Meet Standard | Completely Meets Standard | _ | | | |
| | | Count | 45 | 14 | 59 | | | |
| | | Auspices | 76.3% | 23.7% | 100.0% | | | |
| | Public | % within Records of doctor's notes on sick children | 45.5% | 23.0% | 36.9% | | | |
| Centre | | % of Total | 28.1% | 8.8% | 36.9% | | | |
| Auspices | | Count | 54 | 47 | 101 | | | |
| | | % within Centre Au <mark>spices</mark> | 53.5% | 46.5% | 100.0% | | | |
| Priva | Private | % within Records of doctor's notes on sick children | 54.5% | 77.0% | 63.1% | | | |
| | | % of Total | 33.8% | 29.4% | 63.1% | | | |
| | | Count | 99 | 61 | 160 | | | |
| | | % within Centre Auspices | 61.9% | 38.1% | 100.0% | | | |
| Total | | % within Records of doctor's notes on sick children | 100.0% | 100.0% | 100.0% | | | |
| | | % of Total | 61.9% | 38.1% | 100.0% | | | |

| Chi-Square Tests | | | | | | | | |
|------------------------------------|--------|----|-----------------|----------------|----------------|--|--|--|
| | Value | df | Asymp. Sig. (2- | Exact Sig. (2- | Exact Sig. (1- | | | |
| | i | | sided) | sided) | sided) | | | |
| Pearson Chi-Square | 8.211ª | 1 | .004 | | | | | |
| Continuity Correction ^b | 7.273 | 1 | .007 | | | | | |
| Likelihood Ratio | 8.509 | 1 | .004 | | | | | |
| Fisher's Exact Test | | | | .004 | .003 | | | |
| Linear-by-Linear | 8,160 | 1 | .004 | | | | | |
| Association | | | | | | | | |
| N of Valid Cases | 160 | | | | l | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 22.49.

| Crosstab | | | | | | | |
|----------|-------------------------------|---|-----------------|-----------------------------|--------|-------|--------|
| | Handwashing procedures posted | | | | | | |
| | | | Does Not | Completely | | | |
| | | | Completely Meet | Meets Standard | | | |
| | | 0 | Standard | | | | |
| | | Count | 11 | 48 | 59 | | |
| | Public | % within Centre Auspices | 18.6% | 81.4% | 100.0% | | |
| | | % within Handwashing procedures posted | 26.8% | 40.3% | 36.9% | | |
| Centre | | % of Total | 6.9% | 30.0% | 36.9% | | |
| Auspices | | Count | 30 | 71 | 101 | | |
| | Privata | Privato | Private | % within Centre Auspices | 29.7% | 70.3% | 100.0% |
| | Flivale | % within Handwashing procedures posted | 73.2% | 59.7% | 63.1% | | |
| l . | | % of Total | 18.8% | 44.4% | 63.1% | | |
| | | Count | 41 | 119 | 160 | | |
| Total | | % within Centre Auspices | 25.6% | 74.4% | 100.0% | | |
| | | % within Handwashing procedures posted | 100.0% | 100.0% | 100.0% | | |
| | | % of Total | 25.6% | 74.4% | 100.0% | | |

Centre Auspices * Hand washing procedures posted

Chi-Square Tests

| 4 PR | Value | df | Asymp. Sig. (2- sided) | Exact Sig. (2- sided) | Exact Sig. (1- sided) |
|------------------------------------|--------|----|---------------------------|--------------------------|--------------------------|
| Pearson Chi-Square | 2.390* | 1 | .122 | LUBB | |
| Continuity Correction ^b | 1.845 | 1 | NOBIS .174 | | |
| Likelihood Ratio | 2.469 | 1 | .116 | | |
| Fisher's Exact Test | | | | .137 | .086 |
| Linear-by-Linear Association | 2.375 | 1 | .123 | | |
| N of Valid Cases | 160 | | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 15.12.

b. Computed only for a 2x2 table

CROSSTABS

/TABLES=Auspices6 BY Sanitizer4 NewFoods7 Site10 Disinfectants11 ToySafe12 Items13 ToyDisinfect14 Glove15 Strings16 SmallObjects17 Supervise18

/FORMAT=AVALUE TABLES/STATISTICS=CHISQ PHI

/CELLS=COUNT ROW COLUMN TOTAL/COUNT ROUND CELL

/BARCHART/METHOD=EXACT TIMER(5).

Case Processing Summary

| | Cases | | | | | |
|---|-------|---------|---|---------|-------|---------|
| | , | Valid | P | Missing | Total | |
| | N | Percent | Ν | Percent | N | Percent |
| Centre Auspices * Use of hand sanitizers | 462 | 100.0% | 0 | 0.0% | 462 | 100.0% |
| Centre Auspices * Children encouraged to try new foods | 462 | 100.0% | 0 | 0.0% | 462 | 100.0% |
| Centre Auspices * Pest breeding areas | 462 | 100.0% | 0 | 0.0% | 462 | 100.0% |
| Centre Auspices * Floored cleaned with disinfectants | 462 | 100.0% | 0 | 0.0% | 462 | 100.0% |
| Centre Auspices * Toys and equipments safe | 462 | 100.0% | 0 | 0.0% | 462 | 100.0% |
| Centre Auspices * Sharing of personal items | 462 | 100.0% | 0 | 0.0% | 462 | 100.0% |
| Centre Auspices * Shared toys disinfected | 462 | 100.0% | 0 | 0.0% | 462 | 100.0% |
| Centre Auspices * Use of disposable gloves | 462 | 100.0% | о | 0.0% | 462 | 100.0% |
| Centre Auspices * Dangerous things are out of reach of children | 462 | 100.0% | 0 | 0.0% | 462 | 100.0% |
| Centre Auspices * Small dangerous items are out of reach | 462 | 100.0% | 0 | 0.0% | 462 | 100.0% |
| Centre Auspices * Children are actively supervised | 462 | 100.0% | 0 | 0.0% | 462 | 100.0% |

| | | | Crosstab | | |
|----------|---------------------------------|---------------------------------|--------------------------------------|------------------------------|--------|
| | | | Use of hand | sanitizers | Total |
| | | | Does Not Completely Meet Standard | Completely Meets Standard | |
| | | Count | 66 | 48 | 114 |
| | | % within Centre | | | |
| Public | Auspices | 57.9% | 42.1% | 100.0% | |
| | % within Use of hand sanitizers | 28.7% | 20.7% | 24.7% | |
| Centre | | % of Total | 14.3% | 10.4% | 24.7% |
| Auspices | | Count | 164 | 184 | 348 |
| Private | % within Centre Auspices | 47.1% | 52.9% | 100.0% | |
| | | % within Use of hand sanitizers | 71.3% | 79.3% | 75.3% |
| | | % of Total | 35.5% | 39.8% | 75.3% |
| | | Count | 230 | 232 | 462 |
| Total | | % within Centre Auspices | 49.8% | 50.2% | 100.0% |
| | | % within Use of hand sanitizers | 100.0% | 100.0% | 100.0% |
| | | % of Total | 49.8% | 50.2% | 100.0% |

Centre Auspices * Use of hand sanitizers

Chi-Square Tests

| | | - | | | | |
|-------------------------|--------|----|-------------|------------|------------|-------------|
| | Value | df | Asymp. Sig. | Exact Sig. | Exact Sig. | Point |
| | | | (2-sided) | (2-sided) | (1-sided) | Probability |
| Pearson Chi- | 3 983ª | 1 | .046 | .052 | .029 | |
| Square | 0.000 | | | | | |
| Continuity | 3 564 | 1 | .059 | | | |
| Correction ^b | 0.001 | | | | | |
| Likelihood Ratio | 3.995 | 1 | .046 | .052 | .029 | |
| Fisher's Exact Test | | | | .052 | .029 | |
| Linear-by-Linear | 3 9740 | 1 | .046 | .052 | .029 | .012 |
| Association | 0.074 | ' | | | | |
| N of Valid Cases | 462 | | | | | 1 |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 56.75.

b. Computed only for a 2x2 table

c. The standardized statistic is 1.994.

| | | Cro | sstab | | |
|----------|---------|--|---------------------|------------------|--------|
| | | | Children encourageo | to try new foods | Total |
| | | | Does Not | Completely | |
| | | | Completely Meet | Meets Standard | |
| | | Count | Standard | | |
| | | | 34 | 80 | 114 |
| | | % within Centre Auspices | 29.8% | 70.2% | 100.0% |
| Public | Public | % within Children | | | |
| | | encouraged to try new foods | 33.7% | 22.2% | 24.7% |
| Centre | | % of Total | 7.4% | 17.3% | 24.7% |
| Auspices | | Count | 67 | 281 | 348 |
| | | % within Centre Auspices | 19.3% | 80.7% | 100.0% |
| | Private | % within Children | des | | |
| | | encouraged to try new foods | 66.3% | 77.8% | 75.3% |
| | | % of Total | 14.5% | 60.8% | 75.3% |
| | | Count | 101 | 361 | 462 |
| | | % within Centre Auspices | 21.9% | 78.1% | 100.0% |
| Total | | % within Children encouraged to try new | 100.0% | 100.0% | 100.0% |
| | | foods % of Total | 21.9% | 78.1% | 100.0% |

Centre Auspices * Children encouraged to try new foods

Chi-Square Tests

| | Value | df | Asymp. Sig. | Exact Sig. | Exact Sig. | Point |
|---------------------------------------|--------|----|-------------|------------|------------|-------------|
| | | | (2-sided) | (2-sided) | (1-sided) | Probability |
| Pearson Chi- Square | 5.618ª | 1 | .018 | .019 | .014 | |
| Continuity Correction ^b | 5.016 | 1 | .025 | | | |
| Likelihood Ratio | 5.352 | 1 | .021 | .026 | .014 | |
| Fisher's Exact Test | | | | .026 | .014 | |
| Linear-by-Linear | 5 6060 | 1 | .018 | .019 | .014 | .007 |
| Association | 5.000 | ' | | | | |
| N of Valid Cases | 462 | | | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 24.92.

b. Computed only for a 2x2 table

c. The standardized statistic is 2.368.

| | | | Crosstab | Sec. All Sec. All Sec. | |
|----------|-----------------|-----------------|--------------------------------------|------------------------------|---------|
| | | | Pest breedir | ng areas | Total |
| | | | Does Not Completely Meet Standard | Completely Meets Standard | |
| | | Count | 30 | 84 | 114 |
| Public | % within Centre | | | | |
| | Auspices | 26.3% | 73.7% | 100.0% | |
| | % within Pest | | | | |
| | | breeding areas | 34.9% | 22.3% | 24.7% |
| Centre | | % of Total | 6.5% | 19.20/ | 21 70/ |
| Auspices | | Count | 56 | 10.278 | 24.770 |
| | | % within Centre | 50 | 292 | 340 |
| | | Auspices | 16.1% | 83.9% | 100.0% |
| | Private | % within Pest | - un | | |
| | | breeding props | 65.1% | 77.7% | 75.3% |
| | | | 16 A | | |
| | | | 12.1% | 63.2% | 75.3% |
| | | Count | 86 | 376 | 462 |
| | | % within Centre | 18.6% | 81.4% | 100.0% |
| Total | | Auspices | 10.070 | 01.174 | 100.070 |
| | | % within Pest | 100.0% | 100.0% | 100.0% |
| | | breeding areas | 100.0% | 100.0% | 100.0% |
| | (| % of Total | 18.6% | 81.4% | 100.0% |

Centre Auspices * Pest breeding areas

Chi-Square Tests

| | Value | df | Asymp. Sig. | Exact Sig. | Exact Sig. | Point |
|-------------------------|--------|----|-------------|------------|------------|-------------|
| | | | (2-sided) | (2-sided) | (1-sided) | Probability |
| Pearson Chi- | 5.925ª | 1 | .015 | .018 | .012 | |
| Square | | | | | | |
| Continuity | 5.269 | 1 | .022 | | | |
| Correction ^b | | | 010 | 026 | 012 | |
| Likelihood Ratio | 5.590 | 1 | .018 | .020 | .012 | |
| Fisher's Exact Test | | | | .018 | .012 | |
| Linear-by-Linear | 5 912° | 1 | .015 | .018 | .012 | .006 |
| Association | 0.012 | | | | | |
| N of Valid Cases | 462 | | | | | L <u></u> |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 21.22.

b. Computed only for a 2x2 table

c. The standardized statistic is 2.431.

Centre Auspices * Floored cleaned with disinfectants

| | | 010 | JSSTAD | | |
|-----------------------------|---------|---|---|------------------------------|--------------|
| | | | Floored cleaned w | ith disinfectants | Total |
| | _ | Count | Does Not Completely Meet Standard | Completely Meets Standard | |
| | | % within Control | 33 | 81 | 114 |
| | Public | Auspices | 28.9% | 71.1% | 100.0% |
| Publi Centre Auspices | FUDIIC | % within Floored cleaned with disinfectants | 51.6% | 20.4% | 24.7% |
| | | % of Total | 7.1% | 17.5% | 24.7% |
| | | % within Court | 31 | 317 | 348 |
| | | Auspices | 8.9% | 91.1% | 100.0% |
| | Private | % within Floored cleaned with disinfectants | 48.4% | 79.6% | 75.3% |
| | | % of Total Count | 6.7% 64 | 68.6% 398 | 75.3% 462 |
| | | % within Centre Auspices | 13.9% | 86.1% | 100.0% |
| Total | | % within Floored cleaned with disinfectants | 100.0% | 100.0% | 100.0% |
| | · | % of Total | 13.9% | 86.1% | 100.0% |

Chi-Square Tests

| | Value | df | Asymp. Sig. | Exact Sig. | Exact Sig. | Point |
|-------------------------|---------|----|-------------|------------|------------|-------------|
| | | | (2-sided) | (2-sided) | (1-sided) | Probability |
| Pearson Chi- | 29 8058 | S | 000 | 000 | 000 | |
| Square | 20.095 | | NOB | S | .000 | |
| Continuity | 27 241 | 4 | 000 | | | |
| Correction ^b | 21.241 | ' | .000 | | | |
| Likelihood Ratio | 25.444 | 1 | .000 | .000 | .000 | |
| Fisher's Exact Test | | | | .000 | .000 | |
| Linear-by-Linear | 20 8330 | 1 | 000 | .000 | .000 | .000 |
| Association | 20,000 | | | | | |
| N of Valid Cases | 462 | | | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 15.79.

b. Computed only for a 2x2 table

c. The standardized statistic is 5.370.

Centre Auspices * Toys and equipments safe

| | | | osstab | | |
|----------|---------|--------------------------------------|---|------------------------------|--------|
| | | | Toys and equip | ments safe | Total |
| | | | Does Not Completely Meet Standard | Completely Meets Standard | |
| 1 | | Count | 24 | 90 | 114 |
| Pu | Public | Auspices | 21.1% | 78.9% | 100.0% |
| | | % within Toys and equipments safe | 41.4% | 22.3% | 24.7% |
| | | % of Total | 5.2% | 19.5% | 24.7% |
| Auspices | | Count | 34 | 314 | 348 |
| D, | Private | % within Centre Auspices | 9.8% | 90.2% | 100.0% |
| | | % within Toys and equipments safe | 58.6% | 77.7% | 75.3% |
| | | % of Total | 7.4% | 68.0% | 75.3% |
| | | Count | 58 | 404 | 462 |
| Total | | % within Centre Auspices | 12.6% | 87.4% | 100.0% |
| | | % within Toys and equipments safe | 100.0% | 100.0% | 100.0% |
| | | % of Total | 12.6% | 87.4% | 100.0% |

| | Chi-Square Tests | | | | | | | |
|---------------------------------------|------------------|----|--------------------------|-------------------------|-------------------------|----------------------|--|--|
| | Value | df | Asymp. Sig. (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) | Point Probability | | |
| Pearson Chi- Square | 9. 957 ª | 1 | .002 | .002 | .002 | | | |
| Continuity Correction ^b | 8.956 | 1 | .003 N O B | s | | | | |
| Likelihood Ratio | 9.045 | 1 | .003 | .003 | .002 | | | |
| Fisher's Exact Test | | | | .003 | .002 | | | |
| Linear-by-Linear | 9.935° | 1 | .002 | .002 | .002 | .001 | | |
| Association | 462 | | | | | | | |
| | | L | | | | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 14.31.

b. Computed only for a 2x2 table

c. The standardized statistic is 3.152.

Centre Auspices * Sharing of personal items

| | 2010/02/02 | | rosstab | | |
|----------|------------|--|---|------------------------------|--------|
| | | | Sharing of pers | sonal items | Total |
| | | | Does Not Completely Meet Standard | Completely Meets Standard | |
| | | Count | 15 | 99 | 114 |
| Centre | Public | Auspices | 13.2% | 86.8% | 100.0% |
| | | % within Sharing of personal items | 29.4% | 24.1% | 24.7% |
| | | % of Total | 3.2% | 21.4% | 24.7% |
| Auspices | | Count | 36 | 312 | 348 |
| | Private | % Within Centre Auspices | 10.3% | 89.7% | 100.0% |
| | | % within Sharing of <mark>personal items</mark> | 70.6% | 75.9% | 75.3% |
| | | % of Total | 7.8% | 67.5% | 75.3% |
| Total | | % within Centre Auspices | 11.0% | 89.0% | 402 |
| | | % within Sharing of personal items | 100.0% | 100.0% | 100.0% |
| | | % of Total | 11.0% | 89.0% | 100.0% |

| Chi-Square Tests | | | | | | | |
|---------------------------------------|-------|----|--------------------------|-------------------------|-------------------------|----------------------|--|
| | Value | df | Asymp. Sig. (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) | Point Probability | |
| Pearson Chi- Square | .692ª | 1 | .406 | .491 | .251 | | |
| Continuity Correction ^b | .435 | 1 | N 0 B | S | | | |
| Likelihood Ratio | .669 | 1 | .414 | .491 | .251 | | |
| Fisher's Exact Test | | | | .394 | .251 | | |
| Linear-by-Linear | .690° | 1 | .406 | .491 | .251 | .093 | |
| Association | | | | | | | |
| N of Valid Cases | 462 | | | L | | <u> </u> | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 12.58.

b. Computed only for a 2x2 table

c. The standardized statistic is .831.

Centre Auspices * Shared toys disinfected

| | | | rosstab | | |
|----------|---------|----------------------------------|---|------------------------------|--------|
| | | | Shared toys d | isinfected | Total |
| | | Count | Does Not Completely Meet Standard | Completely Meets Standard | |
| _ | | % within Contra | 60 | 54 | 114 |
| | Public | Auspices | 52.6% | 47.4% | 100.0% |
| | | % within Shared toys disinfected | 39.7% | 17.4% | 24.7% |
| Centre | | % of Total | 13.0% | 11.7% | 24.7% |
| Adapteea | | Count | 91 | 257 | 348 |
| | Private | % within Centre Auspices | 26.1% | 73.9% | 100.0% |
| | | % within Shared toys disinfected | 60.3% | 82.6% | 75.3% |
| | | % of Total | 19.7% | 55.6% | 75.3% |
| | | Count | 151 | 311 | 462 |
| Total | | % within Centre Auspices | 32.7% | 67.3% | 100.0% |
| TOTA | | % within Shared toys disinfected | かか 100.0% | 100.0% | 100.0% |
| | | % of Total | 32.7% | 67.3% | 100.0% |

| Chi-Square Tests | | | | | | |
|-------------------------|---------|----|-------------|------------|------------|-------------|
| | Value | df | Asymp. Sig. | Exact Sig. | Exact Sig. | Point |
| | TI. | | (2-sided) | (2-sided) | (1-sided) | Probability |
| Pearson Chi- | 27.371ª | S1 | .000 | .000 | .000 | |
| Square | | - | 1 | | | |
| Continuity | 26 181 | 1 | | S | | |
| Correction ^b | 20.101 | | 1000 | | | |
| Likelihood Ratio | 26.239 | 1 | .000 | .000 | .000 | |
| Fisher's Exact Test | | | | .000 | .000 | |
| Linear-by-Linear | 07 2120 | 1 | 000 | .000 | .000 | .000 |
| Association | 21.3 2 | | | | | |
| N of Valid Cases | 462 | | | | | L |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 37.26.

b. Computed only for a 2x2 table

c. The standardized statistic is 5.226.

Centre Auspices * Use of disposable gloves

| | | | rosstab | | |
|------------|---------|--------------------------------------|---|------------------------------|--------|
| | | | Use of dispose | ble gloves | Total |
| | | Court | Does Not Completely Meet Standard | Completely Meets Standard | |
| | | Count | 35 | 79 | 114 |
| | Public | Auspices | 30.7% | 69.3% | 100.0% |
| . . | | % within Use of disposable gloves | 38.5% | 21.3% | 24.7% |
| Centre | | % of Total | 7.6% | 17.1% | 24.7% |
| Лизрісез | | Count | 56 | 292 | 348 |
| | Private | % within Centre Auspices | 16.1% | 83.9% | 100.0% |
| | | % within Use of disposable gloves | 61.5% | 78.7% | 75.3% |
| | | % of Total | 12.1% | 63.2% | 75.3% |
| Tatal | | % within Centre Auspices | 19.7% | 80.3% | 100.0% |
| TOTAL | | % within Use of disposable gloves | 100.0% | 100.0% | 100.0% |
| | | % of Total | 19.7% | 80.3% | 100.0% |

Chi-Square Tests

| | Value | df | As <mark>ymp. Sig.</mark> (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) | Point Probability |
|---------------------------------------|---------|----|--|-------------------------|-------------------------|----------------------|
| Pearson Chi- Square | 11.588° | 1 | .001 | .001 | .001 | |
| Continuity Correction ^b | 10.683 | 1 | NOB1 .001 | S | | |
| Likelihood Ratio | 10.788 | 1 | .001 | .002 | .001 | |
| Fisher's Exact Test | | | | .001 | .001 | |
| Linear-by-Linear Association | 11.563° | 1 | .001 | .001 | .001 | .000 |
| N of Valid Cases | 462 | | | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 22.45.

b. Computed only for a 2x2 table

c. The standardized statistic is 3.400.

Centre Auspices * Dangerous things are out of reach of

| | | Cros | sstab | | |
|----------|---------|--|---|------------------------------|--------|
| | | | Dangerous things a childr | re out of reach of en | Total |
| | | Count | Does Not Completely Meet Standard | Completely Meets Standard | |
| | | % within Centre | 21 | 93 | 114 |
| | Dublia | Auspices | 18.4% | 81.6% | 100.0% |
| | | % within Dangerous things are out of reach of children | 32.3% | 23.4% | 24.7% |
| Centre | | % of Total | 4.5% | 20.1% | 24.7% |
| Auspices | | Count | 44 | 304 | 348 |
| | Privato | % within Centre Auspices | 12.6% | 87.4% | 100.0% |
| | Thvate | of children | 67.7% | 76.6% | 75.3% |
| | | % of Total | 9.5% | 65.8% | 75.3% |
| | | Count | 65 | 397 | 462 |
| | | % within Centre Auspices | 14.1% | 85.9% | 100.0% |
| Total | | % within Dangerous things are out of reach of children | 100.0% | 100.0% | 100.0% |
| | | % of Total | 14.1% | 85.9% | 100.0% |

Chi-Square Tests

| | Value | df | Asymp. Sig. (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) | Point Probability |
|---------------------------------------|--------|----|--------------------------|-------------------------|-------------------------|----------------------|
| Pearson Chi- Square | 2.371ª | 1 | NO ₁₂₄ | .161 | .085 | |
| Continuity Correction ^b | 1.917 | 1 | .166 | | | |
| Likelihood Ratio | 2.255 | 1 | .133 | .161 | .085 | |
| Fisher's Exact Test | | | | .161 | .085 | |
| Linear-by-Linear | 2 2660 | 1 | 124 | .161 | .085 | .037 |
| Association | 2.300 | | | | | |
| N of Valid Cases | 462 | | | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 16.04.

b. Computed only for a 2x2 table

c. The standardized statistic is 1.538.

Centre Auspices * Small dangerous items are out of reach

| | | | ootab | | |
|----------|---------|---------------------|-------------------|-------------------------------|---------|
| | | | Small dangerous i | tems are out of | Total |
| | | | reac | h | |
| | | | Does Not | Completely | - 1 |
| | | | Completely Meet | Meets Standard | |
| | | 0 | Standard | etter etter etter etter etter | |
| | | Count | 24 | 90 | 114 |
| | | % within Centre | | 50 | 1.1.1 |
| | _ | Auspices | 21.1% | 78.9% | 100.0% |
| | Public | % within Small | | | |
| | | dangerous items are | 33.2% | 00.40/ | 24 70/ |
| | | out of reach | 33.376 | 23.1% | 24,170 |
| Centre | | % of Total | E 00/ | 10 51 | 0.4.70 |
| Auspices | | Count | 0.2% | 19.5% | 24.7% |
| - | | % within Control | 48 | 300 | 348 |
| | | | 13.8% | 86.2% | 100.0% |
| | Drivete | Auspices | 10.070 | 00.270 | 100.070 |
| | Filvale | % within Small | 19 | | |
| | | dangerous items are | 66.7% | 76.9% | 75.3% |
| | | out of reach | - un | | |
| | | % of Total | 10.4% | 64.9% | 75.3% |
| | | Count | 72 | 390 | 462 |
| | | % within Centre | 15.001 | | 100.004 |
| | | Auspices | 15.6% | 84.4% | 100.0% |
| Total | | % within Small | | | |
| | | dangerous items are | 100.0% | 100.0% | 100.0% |
| | | out of reach | | | |
| | | % of Total | 15.6% | 84.4% | 100.0% |

Crosstab

Chi-Square Tests

| | Value | df | Asymp. Sig. | Exact Sig. | Exact Sig. | Point |
|---------------------------------------|--------|----|-------------|------------|------------|-------------|
| | | | (2-sided) | (2-sided) | (1-sided) | Probability |
| Pearson Chi- Square | 3.440ª | 1 | .064 | .074 | .047 | |
| Continuity Correction ^b | 2.910 | 1 | .088 | | | |
| Likelihood Ratio | 3,259 | 1 | .071 | .074 | .047 | |
| Fisher's Exact Test | | | | .074 | .047 | |
| Linear-by-Linear | 3 432° | 1 | .064 | .074 | .047 | .022 |
| Association | 0.402 | | | | | |
| N of Valid Cases | 462 | | | l | | l |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 17.77.

b. Computed only for a 2x2 table

c. The standardized statistic is 1.853.

Centre Auspices * Children are actively supervised

| | | Cr | osstab | | |
|----------|----------|--|---|------------------------------|--------|
| | | | Children are active | ely supervised | Total |
| <u> </u> | | Count | Does Not Completely Meet Standard | Completely Meets Standard | |
| | | % within Contro | 32 | 82 | 114 |
| | Public | Auspices | 28.1% | 71.9% | 100.0% |
| | | % within Children are actively supervised | 58.2% | 20.1% | 24.7% |
| Centre | | % of Total | 6.9% | 17.7% | 24.7% |
| Auspices | | Count | 23 | 325 | 348 |
| | Private | Auspices | 6.6% | 93.4% | 100.0% |
| | | % within Children are actively supervised | 41.8% | 79.9% | 75.3% |
| | | % of Total | 5.0% | 70.3% | 75.3% |
| | | Count | 55 | 407 | 462 |
| Total | | % within Centre Auspices | 11.9% | 88.1% | 100.0% |
| 1010 | | % within Children are actively supervised | 100.0% | 100.0% | 100.0% |
| | <u> </u> | % of Total | 11.9% | 88.1% | 100.0% |

| Chi-Square Tests | | | | | | |
|-------------------------|---------|----|-------------|------------|------------|-------------|
| | Value | df | Asymp. Sig. | Exact Sig. | Exact Sig. | Point |
| | 11 | | (2-sided) | (2-sided) | (1-sided) | Probability |
| Pearson Chi- | 27 7118 | | 000 | 000 | 000 | |
| Square | 37.71 | 2 | .000 | | | |
| Continuity | 35 692 | 1 | N 0,000 | s | | |
| Correction ^b | 00.002 | | | | | |
| Likelihood Ratio | 32.523 | 1 | .000 | .000 | .000 | |
| Fisher's Exact Test | | | | .000 | .000 | |
| Linear-by-Linear | 37 6299 | 1 | .000 | .000 | .000 | .000 |
| Association | 0,.010 | | | | | |
| N of Valid Cases | 462 | | | | l | 1 |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 13.57.

b. Computed only for a 2x2 table

c. The standardized statistic is 6.134.

APPENDIX S

NVivo Analysis Output for Research Hypothesis 1

| | Coding Summary By No. | | 12/03/2018 14 |
|-------------------------------------|--|-------------------|--|
| | Centre Type | le | |
| | 12/02/2010 1 ··· | | |
| AggregateClassificationCours | 14:45 | | |
| HEBI CEATE CHASSING ALL ON COVERAGE | Number Of CodingReference References Number | Coded Initials | ByModified On |
| Node | | and a starte of | and an |
| Nodes\\Open ended res | ponses\\Centre Type Resp | onses\For (| Profit |
| Dataset | | · · | |
| Internals\\Centre Type | | | |
| | | | |
| U.0512 | 10 | | |
| | 1 A 1 | SAE | 10/03/2018 |
| the private man, he is using his fo | or money | | 13:48 |
| | | | |
| | 2 | SAE | 10/03/2018 |
| | | | 13:52 |
| they will normally use the school | fees | | |
| | 3 | SAE | 10/03/2018 |
| | | | 13:53 |
| they are doing it for their own pro | ofit | | |
| | 4 | SAE | 10/03/2018 |
| | | | 13:54 |
| they have the money for their ow | vn interest and they want their scho | ol to be in a goo | d |
| | 5 | SAE | 10/03/2018 |
| | | | 14:03 |
| it is somebody's business that the | e person is doing | | |
| | 6 | SAE | 10/03/2018 14:04 |
| herause it is their husiness | | | A 7.07 |
| Deregae it is their posities? | 7 | SAE | 10/03/2018 |
| | | | 14:07 |
| because they take money from t | the parents, | CAF | 10/03/2018 |
| | 8 | SAE | 14:11 |

they always want to sell their school

| but with the priva | ate they are doing it for money | 9 | SAE | 10/03/2018 14:20 |
|--------------------|---|--------------------------|-------------------|---------------------|
| Repor | ts\\Coding Summary By Node Report | | | |
| | | | | Page 1 of 4 |
| Aggregate Class | ification Coverage Numb | | | 12/03/2018 14:4 |
| | References | odingReference Number | Coded Initials | ByModified On |
| orlvate man is mo | otivated by profit, | 10 | SAE | 10/03/2018 14:22 |
| Nodes\\Ope | en ended responses\\Centre | Type Respon | ses\Nati | onal Cake |
| Dataset | | , renepting | | |
| Internals\\C | entre Type | | | |
| Yes | 0.0831 12 | | | |
| | | 1 | SAE | 10/02/2019 |
| government will | plan everything | · | JAL | 13:48 |
| | | 2 | SAE | 10/03/2018 |
| everything will b | e depending on the government | | | 13.50 |
| | | 3 | SAE | 10/03/2018 |
| the government | to bring everything for them | | | 13:51 |
| | | 4 | SAE | 10/03/2018 |
| but for the gover | rnment, the government will promise t | this day but maybe | e they canno | 13:52 pt. |
| | | | CAF | 10/02/2018 |
| | | 5 | SAE | 14:00 |
| the capitation, e | verything is on capitation, capitation, c | apitation, | | |
| | | 6 | SAE | 10/03/2018 |
| everything we w | vant to walt for government | | | 14:02 |
| | | 7 | SAE | 10/03/2018 14:04 |
| but with the gov | vernment, this one is not for me, | | | |
| 14 - 1 - 1 - 1 - 1 | | 8 | SAE | 10/03/2018 14:06 |

339

in the public schools, everything is based on the government 9 SAE 10/03/2018 you cannot use the capitation grant to buy those things 14:09 10 SAE 10/03/2018 Yea.. I believe that. With the public, everything is done by the government 14:19 Reports\\Coding Summary By Node Report Page 2 of 4 12/03/2018 14:45 Aggregate Classification Coverage Number Of CodingReference Coded **ByModified On** References Number Initials 11 SAE 10/03/2018 14:19 If the government the national cake you don't get yours it means your class will not be well equipped 12 SAE 10/03/2018 14:23 the public we know it, it is about the government, government lack resources. Nodes\\Open ended responses\\Centre Type Responses\Nice Facility Dataset Internals\\Centre Type 0.0543 9 Yes SAE 10/03/2018 1 13:45 most of the schools are found in towns or place that you will not inhale any bad thing. SAE 10/03/2018 2 13:53 these facilities, the equipment that they have there is in a good shape SAE 10/03/2018 3 13:54 But when it comes to the neatness, the supervision, the other good physical environment, I will give it to the private schools SAE 10/03/2018 4 14:08 nice facilities; beds; have playing grounds and nurses too. SAE 10/03/2018 5 14:08 some private schools might have a well establish facilities

| They have all the facilities | | 6 | SAE | 10/03/2018 14:09 |
|--|--------------------------------------|-----------------------|-------------|---------------------------------------|
| the place is neat, the place is neat | t well furnished | 7 | SAE | 10/03/2018 14:10 |
| so they see the neat atmosphere | | 8 | SAE | 10/03/2018 14:13 |
| 0 | | | | |
| Reports\\Coding Summa | ry By Node Report | | | Page 3 of 4 |
| | | | | 12/02/2018 14:45 |
| Aggregate Classification Cover | rage Number Of | CodingReference | Coded | By Modified On |
| - | References | Number | Initials | |
| | Contractor front characteristics the | 9 | SAE | 10/03/2018 |
| | | | | 14:20 |
| Parents Dataset Internals\\Centre Type | 79 5 | | | |
| | | 1 | SAE | 10/03/2018 |
| | | | | 13:46 |
| parent who take their wards to p | rivate schools are re | sponsible | | |
| | | 2 BIS | SAE | 10/03/2018 13:47 |
| parents who take their wards to | private schools are | more responsible th | an those wh | o take their wards to |
| government schools. | | | | · · · · · · · · · · · · · · · · · · · |
| | | 3 | SAE | 10/03/2018 14:11 |
| In terms of parents awareness, in | will say private is be | tter | | |
| | | 4 | SAE | 10/03/2018 14:14 |
| When you come to the public sch | nools, parents are no | ot there to guide the | children to | class |
| | | 5 | SAE | 10/03/2018 14:16 |

you will ask where is the parent?

Reports\\Coding Summary By Node Report

Page 4 of 4

APPENDIX T

SPSS Analysis Outputs for Research Hypothesis 2

GET

FILE='C:\Users\user\Desktop\My Threat Data\PhD ECCD Teachers
Health and Safety Practices.sav'.

DATASET NAME DataSet1 WINDOW=FRONT.

CROSSTABS

/TABLES=FormalECE5 AcceptedRatio9c BY Sanitizer4 NewFoods7 Site10 Disinfectants11 ToySafe12 Items13 ToyDisinfect14 Glove15 Strings16 SmallObjects17 Supervise18

/FORMAT=AVALUE TABLES /STATISTICS=CHISQ PHI /CELLS=COUNT ROW COLUMN TOTAL/COUNT ROUND CELL.

| | Valid | | | Cases | | |
|--|-------|----------------|---|------------------|-------|----------------|
| | | | | /lissin g | Total | |
| | N | Percent | N | Percent | N | Percent |
| Formal education on ECCD * Use of hand sanitizers | 462 | 100.0% | 0 | 0.0% | 462 | 100.0% |
| Formal education on ECCD * Children encouraged to try new foods | 462 | 100. 0% | 0 | 0.0% | 462 | 100.0% |
| Formal education on ECCD * Pest breeding areas | 462 | 100.0% | 0 | 0.0% | 462 | 100. 0% |
| Formal education on ECCD * Floored cleaned with disinfectants | 462 | 100.0% | 0 | 0.0% | 462 | 100.0% |
| Formal education on ECCD * Toys and equipments safe | 462 | 100.0% | 0 | 0.0% | 462 | 100.0% |
| Formal education on ECCD * Sharing of personal items | 462 | 100.0% | 0 | 0.0% | 462 | 100.0% |
| Formal education on ECCD * Shared toys disinfected | 462 | 100.0% | 0 | 0.0% | 462 | 100.0% |
| Formal education on ECCD * Use of disposable gloves | 462 | 100.0% | 0 | 0.0% | 462 | 100.0% |
| Formal education on ECCD * Dangerous things are out of reach of children | 462 | 100.0% | 0 | 0.0% | 462 | 100.0% |

Case Processing Summary

| Formal education on ECCD * Small dangerous items are out of reach | 462 | 100 0% | ~1 | | | |
|---|-----|---------|----|------|-----|--------|
| Formal education on ECCD * Children are actively | | 100.076 | | 0.0% | 462 | 100.0% |
| Accepted Teacher to Child Batio * Us | 462 | 100.0% | 0 | 0.0% | 462 | 100.0% |
| sanitizers | 462 | 100.0% | 0 | 0.0% | 462 | 100.0% |
| Accepted Teacher to Child Ratio * Children encouraged to try new foods | 462 | 100.0% | 0 | 0.0% | 462 | 100.0% |
| Accepted Teacher to Child Ratio * Pest breeding areas | 462 | 100.0% | 0 | 0.0% | 462 | 100.0% |
| Accepted Teacher to Child Ratio * Floored cleaned with disinfectants | 462 | 100.0% | 0 | 0.0% | 462 | 100.0% |
| Accepted Teacher to Child Ratio * Toys and equipments safe | 462 | 100.0% | 0 | 0.0% | 462 | 100.0% |
| Accepted Teacher to Child Ratio * Sharing of personal items | 462 | 100.0% | 0 | 0.0% | 462 | 100.0% |
| Accepted Teacher to Child Ratio * Shared toys disinfected | 462 | 100.0% | 0 | 0.0% | 462 | 100.0% |
| Accepted Teacher to Child Ratio * Use of disposable gloves | 462 | 100.0% | 0 | 0.0% | 462 | 100.0% |
| Accepted Teacher to Child Ratio * Dangerous things are out of reach of children | 462 | 100.0% | 0 | 0.0% | 462 | 100.0% |
| Accepted Teacher to Child Ratio * Small dangerous items are out of reach | 462 | 100.0% | 0 | 0.0% | 462 | 100.0% |
| Accepted Teacher to Child Ratio * Children are actively supervised | 462 | 100.0% | 0 | 0.0% | 462 | 100.0% |
| Y.o | | | | | | i |



Formal education on ECCD * Use of hand sanitizers

| Crosstab | | | | | | | | |
|--------------------------------|-----|--|---|------------------------------|--------|--|--|--|
| | | | Use of hand | Total | | | | |
| | | Count | Does Not Completely Meet Standard | Completely Meets Standard | TOLLI | | | |
| | | % within Formal | 123 | 146 | 269 | | | |
| Formal education on ECCD | Ňo | education on ECCD | 45.7% | 54.3% | 100.0% | | | |
| | | % within Use of hand sanitizers | 53.5% | 62.9% | 58.2% | | | |
| | | % of Potal Count % within Formal education on ECCD | 26.6% | 31.6% | 58.2% | | | |
| | | | 107 | 86 | 193 | | | |
| | Yes | | 55.4% | 44.6% | 100.0% | | | |
| | | % within Use of hand sanitizers | 46.5% | 37.1% | 41.8% | | | |
| | | % of Total | 23.2% | 18.6% | 41.8% | | | |
| | | Count | 230 | 232 | 462 | | | |
| Total | | % within Formal education on ECCD | 49.8% | 50.2% | 100.0% | | | |
| | | % within Use of hand sanitizers | 100.0% | 100.0% | 100.0% | | | |
| | | % of Total | 49.8% | 50.2% | 100.0% | | | |

Chi-Square Tests

| | Value | df | Asymp. Sig. (2- sided) | Exact Sig. (2- sided) | Exact Sig. (1- sided) |
|------------------------------------|--------|----|---------------------------|--------------------------|--------------------------|
| Pearson Chi-Square | 4.243ª | 1 | NOBIS.039 | | |
| Continuity Correction ^b | 3.863 | 1 | .049 | | |
| Likelihood Ratio | 4.250 | 1 | .039 | | |
| Fisher's Exact Test | | | | .047 | .025 |
| Linear-by-Linear Association | 4.234 | 1 | .040 | | |
| N of Valid Cases | 462 | | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 96.08.

b. Computed only for a 2x2 table
Formal education on ECCD * Children encouraged to try new

| Crosstab | | | | | | | | | |
|--------------|-----|---|---|------------------------------|--------|--|--|--|--|
| | | | Children encoura | ged to try new | Total | | | | |
| | | Court | Does Not Completely Meet Standard | Completely Meets Standard | | | | | |
| | | % within Format | 65 | 204 | 269 | | | | |
| | No | education on ECCD % within Children | 24.2% | 75.8% | 100.0% | | | | |
| Formal | | encouraged to try new foods | 64.4% | 56.5% | 58.2% | | | | |
| education on | | % of Total | 14.1% | 44.2% | 58.2% | | | | |
| ECCD | Yes | Count | 36 | 157 | 193 | | | | |
| | | % within Formal education on ECCD | 18.7% | 81.3% | 100.0% | | | | |
| | | % within Children encouraged to try new foods | 35.6% | 43.5% | 41.8% | | | | |
| | | % of Total | 7.8% | 34.0% | 41.8% | | | | |
| | | Count | 101 | 361 | 462 | | | | |
| | | % within Formal education on ECCD | 21.9% | 78.1% | 100.0% | | | | |
| Total | | % within Children encouraged to try new foods | 100.0% | 100.0% | 100.0% | | | | |
| | | % of Total | 21.9% | 78.1% | 100.0% | | | | |

Chi-Square Tests

| | Value | df | Asymp. Sig. (2- | Exact Sig. (2- sided) | Exact Sig. (1- sided) |
|------------------------------------|--------|----|-----------------|--------------------------|--------------------------|
| Pearson Chi-Square | 1.998° | 1 | .158 | | |
| Continuity Correction ^b | 1.688 | 1 | .194 | | |
| Likelihood Ratio | 2.022 | 1 | .155 | | |
| Fisher's Exact Test | | | | .172 | .096 |
| Linear-by-Linear Association | 1.993 | 1 | .158 | | |
| N of Valid Cases | 462 | | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 42.19.

Formal education on ECCD * Pest breeding areas

| Crosstab | | | | | | | | |
|-----------------------------|-----|---|---|------------------------------|--------|--|--|--|
| | | | Pest breedir | ng areas | Total | | | |
| | | Count | Does Not Completely Meet Standard | Completely Meets Standard | | | | |
| | | % within Formal | 40 | 229 | 269 | | | |
| | No | education on ECCD | 14.9% | 85.1% | 100.0% | | | |
| Formal | | % within Pest breeding areas | 46.5% | 60.9% | 58.2% | | | |
| education on ECCD Yes | | % of Total | 8.7% | 49.6% | 58.2% | | | |
| | | | 46 | 147 | 193 | | | |
| | Yes | education on ECCD | 23.8% | 76.2% | 100.0% | | | |
| | | % within Pest breeding areas | 53.5% | 39.1% | 41.8% | | | |
| | | % of Total | 10.0% | 31.8% | 41.8% | | | |
| | | Count | 86 | 376 | 462 | | | |
| Total | | % within Formal education on ECCD | 18.6% | 81.4% | 100.0% | | | |
| | | % within Pest breeding area <mark>s</mark> | 100.0% | 100.0% | 100.0% | | | |
| | | % of Total | 18.6% | 81.4% | 100.0% | | | |

Chi-Square Tests

| | Value | df | Asymp. Sig. (2- sided) | Exact Sig. (2- sided) | Exact Sig. (1- sided) |
|------------------------------------|--------|----|---------------------------|--------------------------|--------------------------|
| Pearson Chi-Square | 5.961ª | 1 | .015 NOBIS | | |
| Continuity Correction ^b | 5.384 | 1 | .020 | | |
| Likelihood Ratio | 5.887 | 1 | .015 | | |
| Fisher's Exact Test | | | | .016 | .010 |
| Linear-by-Linear Association | 5.948 | 1 | .015 | | |
| N of Valid Cases | 462 | | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 35.93.

b. Computed only for a 2x2 table

Formal education on ECCD * Floored cleaned with

| Crosstab | | | | | | | | |
|--------------------------------|-----|---|---|------------------------------|--------------|--|--|--|
| | | | Floored cleaned w | ith disinfectants | Total | | | |
| | | Count | Does Not Completely Meet Standard | Completely Meets Standard | , order | | | |
| | | % within Formal | 33 | 236 | 269 | | | |
| | No | education on ECCD % within Floored | 12.3% | 87.7% | 100.0% | | | |
| Formal education on ECCD | | cleaned with disinfectants | 51.6% | 59.3% | 58.2% | | | |
| | | % of Lotal | 7.1% | 51.1% | 58,2% | | | |
| | | Count % within Format | 31 | 162 | 193 | | | |
| | | education on ECCD | 16.1% | 83.9% | 100.0% | | | |
| | Yes | % within Floored cleaned with disinfectants | 48.4% | 40.7% | 41.8% | | | |
| | | % of Total Count | 6.7% 64 | 35.1% 398 | 41.8% 462 | | | |
| | | % within Formal education on ECCD | 13.9% | 86.1% | 100.0% | | | |
| Total | | % within Floored cleaned with disinfectants | 100.0% | 100.0% | 100.0% | | | |
| | | % of Total | 13.9% | 86.1% | 100.0% | | | |

Chi-Square Tests

| | Value | df | Asymp. Sig. (2- sided) | Exact Sig. (2- sided) | Exact Sig. (1- sided) |
|------------------------------------|--------|----|---------------------------|--------------------------|--------------------------|
| Pearson Chi-Square | 1.356° | 4 | NOB15,244 | | |
| Continuity Correction ^b | 1.056 | 1 | .304 | | |
| Likelihood Ratio | 1.343 | 1 | .247 | | |
| Fisher's Exact Test | | | | .275 | .152 |
| Linear-by-Linear Association | 1.353 | 1 | .245 | | |
| N of Valid Cases | 462 | | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 26.74.

Formal education on ECCD * Toys and equipments safe

| Crosstab | | | | | | | | | |
|--------------|-----|--|---|------------------------------|---------------|--|--|--|--|
| | | | Toys and equir | Total | | | | | |
| | _ | Count | Does Not Completely Meet Standard | Completely Meets Standard | , oldi | | | | |
| | | % within Formal | 35 | 234 | 269 | | | | |
| | No | education on ECCD % within Toys and | 13.0% | 87.0% | 100.0% | | | | |
| Formal | | equipments safe | 60.3% | 57.9% | 58.2% | | | | |
| education on | | % of Total Count | 7.6% | 50.6% | 58.2% | | | | |
| 2008 | | % within Formal | 23 | 170 | 193 | | | | |
| | Yes | education on ECCD | 11.9% | 88.1% | 100.0% | | | | |
| | | % within Toys and equipments safe | 39.7% | 42.1% | 4 1.8% | | | | |
| | | % of Total | 5.0% | 36.8% | 41.8% | | | | |
| | | % within Formal | 58 | 404 | 462 | | | | |
| Total | | education on ECCD | 12.6% | 87.4% | 100.0% | | | | |
| | | % within Toys and equipments safe | 100.0% | 100.0% | 100.0% | | | | |
| | | % of Total | 12.6% | 87.4% | 100.0% | | | | |

Chi-Square Tests

| | Value | df | Asymp. Sig. (2- sided) | Exact Sig. (2- sided) | Exact Sig. (1- sided) |
|------------------------------------|-------|----|---------------------------|--------------------------|--------------------------|
| Pearson Chi-Square | .123ª | 1 | .726 | INTER STATE | |
| Continuity Correction ^b | .043 | 1 | .835 | | |
| Likelihood Ratio | .123 | 1 | NOBIS.726 | | |
| Fisher's Exact Test | | | | .777 | .420 |
| Linear-by-Linear Association | .122 | 1 | .727 | | |
| N of Valid Cases | 462 | | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 24.23.

Formal education on ECCD * Sharing of personal items

| Crosstab | | | | | | | | | |
|--------------|-----|---|---|------------------------------|--------------|--|--|--|--|
| | | | Sharing of pers | Total | | | | | |
| | | Count | Does Not Completely Meet Standard | Completely Meets Standard | | | | | |
| | | % within Formel | 27 | 242 | 269 | | | | |
| | No | education on ECCD | 10.0% | 90.0% | 100.0% | | | | |
| Formal | | % within Sharing of personal items | 52.9% | 58.9% | 58.2% | | | | |
| education on | | % of lotal | 5.8% | 52.4% | 58,2% | | | | |
| ECCD | | | 24 | 169 | 193 | | | | |
| Ye | Yes | % within Formal education on ECCD | 12.4% | 87.6% | 100.0% | | | | |
| | | personal items | 47.1% | 41.1% | 41.8% | | | | |
| | | % of Total Count % within Formal | 5.2% 51 | 36.6% 411 | 41.8% 462 | | | | |
| Total | | education on ECCD | 11.0% | 89.0% | 100.0% | | | | |
| | | % within Sharing of personal items | 100.0% | 100.0% | 100.0% | | | | |
| <u> </u> | _ | % of Total | 11.0% | 89.0% | 100.0% | | | | |

Chi-Square Tests

| | Value | df | Asymp. Sig. (2- sided) | Exact Sig. (2- sided) | Exact Sig. (1- sided) |
|------------------------------------|-------|----|---------------------------|--------------------------|--------------------------|
| Pearson Chi-Square | .658ª | 1 | NOBIS.417 | | |
| Continuity Correction ^b | .437 | 1 | .509 | | |
| Likelihood Ratio | .652 | 1 | .419 | | |
| Fisher's Exact Test | | | | .453 | .253 |
| Linear-by-Linear Association | .657 | 1 | .418 | | |
| N of Valid Cases | 462 | | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 21.31.

b. Computed only for a 2x2 table

Formal education on ECCD * Shared toys disinfected

| Crosstab | | | | | | | | | | |
|--------------|-----|--------------------------------------|---|------------------------------|--------------|--|--|--|--|--|
| | | Shared toys disinfected | | | | | | | | |
| | | Count | Does Not Completely Meet Standard | Completely Meets Standard | | | | | | |
| | | % within Formal | 87 | 182 | 269 | | | | | |
| | No | education on ECCD % within Shared | 32.3% | 67.7% | 100.0% | | | | | |
| Formal | | toys disinfected | 57.6% | 58.5% | 58.2% | | | | | |
| education on | | % of Total Count | 18.8% | 39.4% | 58.2% | | | | | |
| LOOD | | % within Format | 64 | 129 | 193 | | | | | |
| | Yes | education on ECCD % within Shared | 33.2% | 66.8% | 100.0% | | | | | |
| | | toys disinfected | 42.4% | 41.5% | 41.8% | | | | | |
| | | % of Total Count | 13.9% 151 | 27.9% 311 | 41.8% 462 | | | | | |
| Total | | education on ECCD | 32.7% | 67.3% | 100.0% | | | | | |
| | | % within Shared toys disinfected | 100.0% | 100.0% | 100.0% | | | | | |
| L | | % of Total | 32,7% | 67.3% | 100.0% | | | | | |

Chi-Square Tests

| | Value | df | Asymp. Sig. (2- sided) | Exact Sig. (2- sided) | Exact Sig. (1- sided) |
|------------------------------------|----------------|----|---------------------------|--------------------------|--------------------------|
| Pearson Chi-Square | .0 34 ª | 1 | .853 | LUM | |
| Continuity Correction ^b | .007 | 1 | NOBIS.933 | | |
| Likelihood Ratio | .034 | 1 | .853 | | |
| Fisher's Exact Test | | | | .920 | .466 |
| Linear-by-Linear Association | .034 | 1 | .853 | | |
| N of Valid Cases | 462 | | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 63.08.

Formal education on ECCD * Use of disposable gloves

| | | Cr | osstab | | |
|--------------|-----|--|---|------------------------------|--------------|
| | | | Use of dispose | able gloves | Total |
| | | Count | Does Not Completely Meet Standard | Completely Meets Standard | Total |
| | | % within Formal | 58 | 211 | 269 |
| | No | education on ECCD % within Use of | 21.6% | 78.4% | 100.0% |
| Formal | | disposable gloves | 63.7% | 56.9% | 58.2% |
| education on | | % of Total Count % within Format | 12.6% | 45.7% | 58.2% |
| ECCD | | | 33 | 160 | 193 |
| Ye | Yes | education on ECCD | 17.1% | 82.9% | 100.0% |
| | | disposable gloves | 36.3% | 43.1% | 41.8% |
| - | | % of Total Count | 7.1% 91 | 34.6% 371 | 41.8% 462 |
| Total | | % within Formal education on ECCD | 19.7% | 80.3% | 100.0% |
| | | % within Use of disposable gloves | 100.0% | 100.0% | 100.0% |
| | | % of Total | 19.7% | 80.3% | 100.0% |

Chi-Square Tests

| | Value | df | Asymp. Sig. (2- sided) | Exact Sig. (2- sided) | Exact Sig. (1- sided) |
|------------------------------------|-------|----|---------------------------|--------------------------|--------------------------|
| Pearson Chi-Square | 1.415 | 1 | .234 | LUN | |
| Continuity Correction ^b | 1.147 | 1 | NOB15.284 | | |
| Likelihood Ratio | 1.431 | 1 | .232 | | |
| Fisher's Exact Test | | | | .286 | .142 |
| Linear-by-Linear Association | 1.412 | 1 | .235 | | |
| N of Valid Cases | 462 | | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 38.02.

Formal education on ECCD * Dangerous things are out of

| | - | Cros | stab | | |
|--------------|-----|--|---|------------------------------|--------|
| | | | Dangerous things of child | are out of reach | Total |
| | | Count | Does Not Completely Meet Standard | Completely Meets Standard | |
| | | % within Formal | 39 | 230 | 269 |
| | No | education on ECCD % within Dangerous | 14.5% | 85.5% | 100.0% |
| Formal | | things are out of reach of children | 60.0% | 57.9% | 58.2% |
| education on | | % of Total | 8.4% | 49.8% | 58.2% |
| ECCD | | Count | 26 | 167 | 193 |
| | | % within Formal education on ECCD | 13.5% | 86.5% | 100.0% |
| | Yes | % within Dangerous things are out of reach of children | 40.0% | 42.1% | 41.8% |
| | | % of Total | 5.6% | 36.1% | 41.8% |
| | | Count | 65 | 397 | 462 |
| Total | | % within Formal education on ECCD | 14.1% | 85.9% | 100.0% |
| | | % within Dangerous things are out of reach of children | 100.0% | 100.0% | 100.0% |
| | _ | % of Total | 14.1% | 85.9% | 100.0% |

Chi-Square Tests

| | Value | df | Asymp. Sig. (2- sided) | Exact Sig. (2- sided) | Exact Sig. (1- sided) |
|------------------------------------|-------|----|---------------------------|--------------------------|--------------------------|
| Pearson Chi-Square | .098ª | 1 | .754 | | |
| Continuity Correction ^b | .031 | 1 | .859 | | |
| Likelihood Ratio | .098 | 1 | .754 | | |
| Fisher's Exact Test | | | | .788 | .432 |
| Linear-by-Linear | 098 | 1 | .755 | | |
| Association | | | | | |
| N of Valid Cases | 462 | | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 27.15.

Formal education on ECCD * Small dangerous items are out of reach

| | | Cro | sstab | | |
|--------------|-----|---|---|------------------------------|--------|
| | | | Small dangerous i read | Total | |
| | | Court | Does Not Completely Meet Standard | Completely Meets Standard | |
| | | % within Formal | 37 | 232 | 269 |
| | No | education on ECCD % within Small | 13.8% | 86.2% | 100.0% |
| Formal | | dangerous items are out of reach | 51.4% | 59.5% | 58.2% |
| education on | | % of Total | 8.0% | 50.2% | 58.2% |
| ECCD | | Count | 35 | 158 | 193 |
| | Yes | % Within Formal education on ECCD | 18.1% | 81.9% | 100.0% |
| | | dangerous items are out of reach | 48.6% | 40.5% | 41.8% |
| | | % of Total | 7.6% | 34.2% | 41.8% |
| | | Count | 72 | 390 | 462 |
| | | % within Formal education on ECCD | 15.6% | 84.4% | 100.0% |
| Total | | % within Small dangerous items are out of reach | 100.0% | 100.0% | 100.0% |
| | _ | % of Total | 15.6% | 84.4% | 100.0% |

Chi-Square Tests

| | Value | df | Asymp. Sig. (2- sided) | Exact Sig. (2- sided) | Exact Sig. (1- sided) |
|------------------------------------|--------|----|---------------------------|--------------------------|--------------------------|
| Pearson Chi-Square | 1.639ª | 1 | .200 | | |
| Continuity Correction ^b | 1.323 | 1 | .250 | | |
| Likelihood Ratio | 1.623 | 1 | .203 | | |
| Fisher's Exact Test | | | | .242 | .125 |
| Linear-by-Linear | 1.635 | 1 | .201 | | |
| Association | 1.000 | | | | |
| N of Valid Cases | 462 | | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 30.08.

| Formal education on supervised | ECCD * Children | are actively |
|-----------------------------------|-----------------|--------------|
| | | and actively |

| | | Cr | osstab | | |
|--------------|-----|---|---|------------------------------|--------|
| | | | Children are activ | elv supervised | Total |
| | | Count | Does Not Completely Meet Standard | Completely Meets Standard | - otu |
| | | % within Formal | 27 | 242 | 269 |
| | No | education on ECCD | 10.0% | 90.0% | 100.0% |
| Formal | | are actively supervised | 49.1% | 59.5% | 58.2% |
| education on | | % of Total | 5.8% | 52.4% | 58.2% |
| ECCD | | Count % within Format | 28 | 165 | 193 |
| | | education on ECCD | 14.5% | 85.5% | 100.0% |
| Y | Yes | % within Children are actively supervised | 50.9% | 40.5% | 41.8% |
| | | % of Total Count | 6.1% | 35.7% | 41.8% |
| Total | | % within Formal education on ECCD | 11.9% | 88.1% | 100.0% |
| | | % within Children are actively supervised | 100.0% | 100.0% | 100.0% |
| L | | % of Total | 11.9% | 88.1% | 100.0% |

Chi-Square Tests

| | Value | df | Asymp. Sig. (2- | Exact Sig. (2- | Exact Sig. (1- |
|------------------------------------|----------------|----|-----------------|----------------|----------------|
| | | | N O B OS | sided) | sided) |
| Pearson Chi-Square | 2.142 ª | 1 | .143 | | |
| Continuity Correction ^b | 1.736 | 1 | .188 | | |
| Likelihood Ratio | 2.115 | 1 | .146 | | |
| Fisher's Exact Test | | | | .148 | .094 |
| Linear-by-Linear Association | 2.137 | 1 | .144 | | |
| N of Valid Cases | 462 | | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 22.98.

Accepted Teacher to Child Ratio * Use of hand sanitizers

| | | Crosst | ab | | |
|---------------------------------------|---|--|---|---------------------------------|---------------|
| | | | Use of hand | sanitizers | Total |
| | | 0 | Does Not Completely Meet Standard | Completely Meets Standard | |
| Accepted Teacher to Child Ratio | High Teacher | % within Accepted Teacher to Child | 85 47.2% | 95 52,8% | 180 100.0% |
| | Ratio | Ratio % within Use of hand senitizore | 37.0% | 40.9% | 39.0% |
| | | % of Total Count | 18.4% | 20.6% | 39.0% |
| | Low T <mark>eacher</mark> to Children Ratio | % within Accepted Teacher to Child Ratio % within Use of | 51.4% | 48.6% | 100.0% |
| | | hand sanitizers % of Total | 31.4% | 29.7% | 61.0% |
| | | Count % within | 230 | 232 | 462 |
| Total | | Accepted Teacher to Child Ratio | 49.8% | 50.2% | 100.0% |
| | | % wi <mark>thin Use of hand sanitizers</mark> | 100.0% | 100.0% | 100.0% |
| | | % of Total | 49.8% | 50.2% | 100.0% |

Chi-Square Tests

| | Value | df | Asymp. Sig. (2- | Exact Sig. (2- | Exact Sig. (1- |
|------------------------------------|-------|----|-----------------|----------------|----------------|
| | | | sided) | sided) | sided) |
| Pearson Chi-Square | .774ª | 1 | .379 | | |
| Continuity Correction ^b | .615 | 1 | .433 | | |
| Likelihood Ratio | .774 | 1 | .379 | | |
| Fisher's Exact Test | | | | .392 | .216 |
| Linear-by-Linear | 772 | 1 | .380 | | |
| Association | | | | | |
| N of Valid Cases | 462 | | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 89.61.

Accepted Teacher to Child Ratio * Children encouraged to try

| | | Crossta | b | | |
|-------------|--------------------|---|---|---------------------------------|---------------|
| | | | Children encoura | Total | |
| | | Count | Does Not Completely Meet Standard | Completely Meets Standard | |
| Accepted | High Teacher to | % within Accepted Teacher to Child Ratio | 27 15.0% | 153 85.0% | 180 100.0% |
| | Children Ratio | % within Children encouraged to try new foods % of Total | 26.7% | 42.4% | 39.0% |
| Teacher to | | | 5.8% | 33.1% | 39.0% |
| Child Ratio | | Count | 74 | 208 | 282 |
| | Low Teacher to | % within Accepted Teacher to Child Ratio | 26.2% | 73.8% | 100.0% |
| | Children Ratio | % within Children encouraged to try new foods | 73.3% | 57.6% | 61.0% |
| | | % of Total Count | 16.0% 101 | 45.0% 361 | 61.0% 462 |
| Total | | % within Accepted Teacher to Child Ratio | 21.9% | 78.1% | 100.0% |
| | | % within Children encouraged to try new foods | 100.0% | 100.0% | 100.0% |
| | 19/ | % of Total | 21.9% | 78.1% | 100.0% |

Chi-Square Tests

| | Value | df | Asymp. Sig. (2- | Exact Sig. (2- | Exact Sig. (1- |
|------------------------------------|---------|----|-----------------|----------------|----------------|
| | | | sided) | siaed) | sided) |
| Pearson Chi-Square | 8.127ª | 1 | .004 | | |
| Continuity Correction ^b | 7.483 | 1 | .006 | | |
| Likelihood Ratio | 8.444 | 1 | .004 | | |
| Fisher's Exact Test | | | | .005 | .003 |
| Linear-by-Linear | 8 1 1 0 | 1 | .004 | | |
| Association | | | | | |
| N of Valid Cases | 462 | | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 39.35.

Accepted Teacher to Child Ratio * Pest breeding areas

| Crosstab | | | | | | | | | | |
|--|--------------------------------------|---|---|---------------------------------|--------|--|--|--|--|--|
| | | | Pest breedi | ng areas | Total | | | | | |
| | | Court | Does Not Completely Meet Standard | Completely Meets Standard | | | | | | |
| | | % within | 29 | 151 | 180 | | | | | |
| High Te to Child Ratio Accepted Teacher to | High Teacher to Children Ratio | Accepted Teacher to Child Ratio | 16.1% | 83.9% | 100.0% | | | | | |
| | | % within Pest breeding areas | 33.7% | 40.2% | 39.0% | | | | | |
| | | | 6.3% | 32.7% | 39.0% | | | | | |
| Child Ratio | | % within | 57 | 225 | 282 | | | | | |
| | Low Teacher to Children | Accepted Teacher to Child Ratio | 20.2% | 79.8% | 100.0% | | | | | |
| | Ratio | % within Pest breeding areas | 66.3% | 59.8% | 61.0% | | | | | |
| | | % of Total | 12.3% | 48.7% | 61.0% | | | | | |
| | | Count | 86 | 376 | 462 | | | | | |
| Total | | % within Accepted Teacher to Child Ratio | 18.6% | 81.4% | 100.0% | | | | | |
| | 8 | % wi <mark>thin Pe</mark> st breeding areas | 100.0% | 100.0% | 100.0% | | | | | |
| | | % of Total | 18.6% | 81.4% | 100.0% | | | | | |

Chi-Square Tests

| | Value | df | Asymp. Sig. (2- | Exact Sig. (2- | Exact Sig. (1- |
|------------------------------------|-----------------|----|-----------------|----------------|----------------|
| | | | sided) | sided) | sided) |
| Pearson Chi-Square | 1. 22 0ª | 1 | .269 | | |
| Continuity Correction ^b | .964 | 1 | .326 | | |
| Likelihood Ratio | 1.238 | 1 | .266 | | |
| Fisher's Exact Test | | | | .327 | .163 |
| Linear-by-Linear | 1 217 | 1 | .270 | | |
| Association | 1.217 | | | | |
| N of Valid Cases | 462 | | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 33.51.

Accepted Teacher to Child Ratio * Floored cleaned with

| Crosstab | | | | | | | | | |
|-------------|------------------------|---|------------------------|---------------------|--------------|--|--|--|--|
| | | | Floored clea | aned with | Total | | | | |
| | | | disinfec | tants | | | | | |
| | | | Does Not Completely | Completely Meets | | | | | |
| | | Count | weet Standard | Standard | | | | | |
| | High | % within Accepted | 21 | 159 | 180 | | | | |
| | Teacher to Children | Ratio | 11.7% | 88.3% | 100.0% | | | | |
| Ratio | Ratio | cleaned with disinfectants | 32.8% | 39.9% | 39.0% | | | | |
| Teacher to | | % of Total | 4.5% | 34.4% | 39.0% | | | | |
| Child Ratio | | Count | 43 | 239 | 282 | | | | |
| | Low Teacher | % within Accepted Teacher to Child Ratio | 15.2% | 84.8% | 100.0% | | | | |
| | Ratio | % within Floored cleaned with disinfectants | 67.2% | 60.1% | 61.0% | | | | |
| | | % of Total Count | 9.3% 64 | 51.7% 398 | 61.0% 462 | | | | |
| | | % within Accepted Teacher to Child Ratio | 13.9% | 86.1% | 100.0% | | | | |
| , otai | | % within Floored cleaned with disinfectants | 100.0% | 100.0% | 100.0% | | | | |
| | TT. | % of Total | 13.9% | 86.1% | 100.0% | | | | |

| Chi-Square Tests | | | | | | | | | |
|------------------------------------|--------|----|-----------------|----------------|----------------|--|--|--|--|
| | Value | df | Asymp. Sig. (2- | Exact Sig. (2- | Exact Sig. (1- | | | | |
| | 1 | | sided) | sided) | sided) | | | | |
| Pearson Chi-Square | 1.181ª | 1 | .277 | | | | | | |
| Continuity Correction ^b | .900 | 1 | .343 | | | | | | |
| Likelihood Ratio | 1.203 | 1 | .273 | | | | | | |
| Fisher's Exact Test | | | | .334 | .172 | | | | |
| Linear-by-Linear | 1 178 | 1 | .278 | | | | | | |
| Association | 1.170 | | | | | | | | |
| N of Valid Cases | 462 | | | | | | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 24.94.

Accepted Teacher to Child Ratio * Toys and equipments safe

| | | | Toys and equi | oments safe | Total |
|---|-------------------------------------|---|---|---------------------------------|--------------|
| | | Count | Does Not Completely Meet Standard | Completely Meets Standard | |
| | | % within | 18 | 162 | 180 |
| High Tea Chil Rati Accepted Teacher to Child Ratio Low to C | High Teacher to Children | Accepted Teacher to Child Ratio | 10.0% | 90.0% | 100.0% |
| | Ratio | % within Toys and equipments safe | 31.0% | 40.1% | 39.0% |
| | | % of Total | 3.9% | 35.1% | 39.0% |
| | | Count | 40 | 242 | 282 |
| | Low Teacher to Children Ratio | Accepted Teacher to Child Ratio | 14.2% | 85.8% | 100.0% |
| | | and equipments safe | 69.0% | 59.9% | 61.0% |
| | | % of Total Count | 8.7% 58 | 52.4% 404 | 61.0% 462 |
| Total | | % within Accepted Teacher to Child Ratio | 12.6% | 87.4% | 100.0% |
| | | % wit <mark>hin Toys</mark> and equipments safe | 100.0% | 100.0% | 100.0% |
| | | % of Total | 12.6% | 87.4% | 100.0% |

| Chi-Square Tests | | | | | | | | |
|------------------------------------|--------|----|-----------------|----------------|----------------|--|--|--|
| | Value | df | Asymp. Sig. (2- | Exact Sig. (2- | Exact Sig. (1- | | | |
| | | | sided) | sided) | sided) | | | |
| Pearson Chi-Square | 1.752° | 1 | .186 | | | | | |
| Continuity Correction ^b | 1.392 | 1 | .238 | | | | | |
| Likelihood Ratio | 1.798 | 1 | .180 | | | | | |
| Fisher's Exact Test | | | | .198 | .118 | | | |
| Linear-by-Linear | 1 749 | 1 | .186 | | | | | |
| Association | 1.1-10 | | | | | | | |
| N of Valid Cases | 462 | | | | | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 22.60.

Crosstab Sharing of personal items Total Does Not Completely Completely Meet Meets Standard Standard Count 25 155 180 % within Accepted High Teacher Teacher to Child 13.9% 86.1% 100.0% to Children Ratio Ratio % within Sharing of personal 49.0% 37.7% 39.0% items Accepted % of Total Teacher to 5.4% 33.5% 39.0% Count Child Ratio 26 256 282 % within Accepted 9.2% 90.8% 100.0% Low Teacher Teacher to Child to Children Ratio Ratio % within Sharing of personal 51.0% 61.0% 62.3% items % of Total 5.6% 55.4% 61.0% Count 462 51 411 % within Accepted 11.0% 89.0% 100.0% Teacher to Child Total Ratio % within Sharing of personal 100.0% 100.0% 100.0% items 11.0% 89.0% 100.0% % of Total

Accepted Teacher to Child Ratio * Sharing of personal items

Chi-Square Tests

| | Value | df | Asymp. Sig. (2- | Exact Sig. (2- | Exact Sig. (1- | | |
|------------------------------------|---------|----|-----------------|----------------|----------------|--|--|
| | | | sided) | sided) | sided) | | |
| Pearson Chi-Square | 2.439ª | 1 | .118 | | | | |
| Continuity Correction ^b | 1.987 | 1 | .159 | | | | |
| Likelihood Ratio | 2.390 | 1 | .122 | | | | |
| Fisher's Exact Test | | | | .129 | .080 | | |
| Linear-by-Linear | 2 4 3 4 | 1 | .119 | | | | |
| Association | | | | | | | |
| N of Valid Cases | 462 | | | | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 19.87.

Accepted Teacher to Child Ratio * Shared toys disinfected

| Crosstab | | | | | | | | | | |
|---------------------------------------|---|---|---|---------------------------------|----------------|--|--|--|--|--|
| | | | Shared toys | disinfected | Total | | | | | |
| | | Count | Does Not Completely Meet Standard | Completely Meets Standard | | | | | | |
| | | % within | 49 | 131 | 180 | | | | | |
| Accepted Teacher to Child Ratio | High Teacher to Children | Accepted Teacher to Child Ratio | 27.2% | 72.8% | 100.0% | | | | | |
| | Ratio | % within Shared toys disinfected | 32.5% | 42.1% | 39.0% | | | | | |
| | | % of Total | 10.6% | 28.4% | 39.0% | | | | | |
| | | Count | 102 | 180 | 282 | | | | | |
| | Low T <mark>eacher</mark> to Chil <mark>dren</mark> Ratio | Accepted Teacher to Child Ratio | 36.2% | 63.8% | 100.0% | | | | | |
| | | % within Shared toys disinfected | 67.5% | 57.9% | 61.0% | | | | | |
| | | % of Total | 22.1% | 39.0% | 61.0% | | | | | |
| | | Count | 151 | 311 | 462 | | | | | |
| Total | | % within Accepted Teacher to Child Ratio | 32.7% | 67.3% | 100.0% | | | | | |
| | 2 | % within Shared toys disinfected | 100.0% | 100.0% | 100. 0% | | | | | |
| | | % of Total | 32.7% | 67.3% | 100.0% | | | | | |

| Chi-Square Tests | | | | | | | | | |
|------------------------------------|--------|----|-----------------|----------------|----------------|--|--|--|--|
| | Value | df | Asymp. Sig. (2- | Exact Sig. (2- | Exact Sig. (1- | | | | |
| | | | sided) | sided) | sided) | | | | |
| Pearson Chi-Square | 3.998ª | 1 | .046 | | | | | | |
| Continuity Correction ^b | 3.602 | 1 | .058 | | | | | | |
| Likelihood Ratio | 4.051 | 1 | .044 | | | | | | |
| Fisher's Exact Test | | | | .053 | .028 | | | | |
| Linear-by-Linear | 3 990 | 1 | .046 | | | | | | |
| Association | 0.000 | | | | | | | | |
| N of Valid Cases | 462 | | | | | | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 58.83.

Accepted Teacher to Child Ratio * Use of disposable gloves

| | | Crosst | ab | | |
|--------------------------------------|--------------------------------|---|---|---------------------------------|--------|
| | | | Use of dispos | able gloves | Total |
| | | Count | Does Not Completely Meet Standard | Completely Meets Standard | TOTAL |
| | | % within | 27 | 153 | 180 |
| High Teacher Children Ratio | High Teacher to Children | Accepted Teacher to Child Ratio | 15.0% | 85.0% | 100.0% |
| | Ratio | % within Use of disposable gloves | 29.7% | 41.2% | 39.0% |
| Teacher to | | % of Total | 5.8% | 33.1% | 39.0% |
| Child Ratio | | Count | 64 | 218 | 282 |
| L | Low Teacher to Children | % within Accepted Teacher to Child Ratio | 22.7% | 77.3% | 100.0% |
| | Ratio | % within Use of disposable gloves | 70.3% | 58.8% | 61.0% |
| | | % of Total | 13.9% | 47.2% | 61.0% |
| | | Count | 91 | 371 | 462 |
| Total | | % within Accepted Teacher to Child Ratio | 19.7% | 80.3% | 100.0% |
| | | % within Use of disposable gloves | 100.0% | 100.0% | 100.0% |
| | | % of Total | 19.7% | 80.3% | 100.0% |

Chi-Square Tests

| · · · · · · · · · · · · · · · · · · · | | | | | |
|---------------------------------------|--------|----|-----------------|----------------|----------------|
| | Value | df | Asymp. Sig. (2- | Exact Sig. (2- | Exact Sig. (1- |
| | | | sided) | sided) | sided) |
| Pearson Chi-Square | 4.113ª | 1 | .043 | | |
| Continuity Correction ^b | 3.641 | 1 | .056 | | |
| Likelihood Ratio | 4.230 | 1 | .040 | | |
| Fisher's Exact Test | | | | .055 | .027 |
| Linear-by-Linear | 4 104 | 1 | .043 | | |
| Association | | | | | |
| N of Valid Cases | 462 | | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 35.45.

Accepted Teacher to Child Ratio * Dangerous things are out

| Crosstab | | | | | | | |
|-------------|---------------|--|---|----------------|---------------|--------|--|
| | | | | Dangerous thin | gs are out of | Total | |
| | | | | reach of c | children | | |
| | | | | Does Not | Completely | | |
| | | | 1 | Meet Standard | Meets | - 0 | |
| | | | Count | 25 | Standard | 100 | |
| | | | % within Accepted | 20 | 155 | 180 | |
| | High Teach | er to | Teacher to Child Ratio | 13.9% | 86.1% | 100.0% | |
| | Childre | en | % within | | | | |
| | Ratio | | Dangerous things are out of reach of children | 38.5% | 39.0% | 39.0% | |
| Teacher to | | | % of Total | 5.4% | 33 5% | 30.0% | |
| Child Ratio | | Count | 40 | 242 | 282 | | |
| | | Low Teacher to Children Ratio | % within Accepted | | 2.72 | 202 | |
| | Low | | Teacher to Child Ratio | 14.2% | 85.8% | 100.0% | |
| | Childre | | % within | | | | |
| | Ratio | | Dangerous things are out of reach of | 61.5% | 61.0% | 61.0% | |
| | | | children | | | | |
| | | | % of Total | 8.7% | 52.4% | 61.0% | |
| | | | Count | 65 | 397 | 462 | |
| 1 | | | % within Accepted | | | | |
| | | | Teacher to Child Ratio | 14.1% | 85.9% | 100.0% | |
| Total | | | % within | | | | |
| 1 | | | Dangerous things | 100.0% | 100.0% | 100.0% | |
| | | | are out of reach of | | | | |
| | | | % of Total | 14.1% | 85.9% | 100.0% | |

Chl-Square Tests

| | Value | df | Asymp. Sig. (2- sided) | Exact Sig. (2- sided) | Exact Sig. (1- sided) |
|--|------------------------|-------------|---------------------------|--------------------------|--------------------------|
| Pearson Chi-Square Continuity Correction ^b Likelihood Ratio | .008ª .000 .800. | 1 1 1 | .929 1.000 .929 | | |
| Fisher's Exact Test Linear-by-Linear Association | .008 | 1 | .929 | 1.000 | .522 |
| N of Valid Cases | 462 | | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 25.32.

Accepted Teacher to Child Ratio * Small dangerous items are

| Crosstab | | | | | | | | |
|-------------|-------------------------------------|---|---|---|---------------------|---------------|--|--|
| | | | | Small dangerous | items are out of | Total | | |
| | | | | read | ch | i otal | | |
| | | | | Does Not Completely Meet Standard | Completely Meets | | | |
| | | | Count | Mider Grandard | Standard | | | |
| | High Teach | er to | % within Accepted Teacher to Child Ratio | 15.0% | 153 85.0% | 180 100.0% | | |
| Accepted | Children Ratio | | % within Small dangerous items are out of reach | 37.5% | 39.2% | 39.0% | | |
| Teacher to | | % of Total | 5.8% | 33.1% | 39.0% | | | |
| Child Ratio | Low Teacher to Children Ratio | Count | 45 | 237 | 282 | | | |
| | | % within Accepted Teacher to Child Ratio | 16.0% | 84.0% | 100.0% | | | |
| | | % within Small dangerous items are out of reach | 62.5% | 60.8% | 61.0% | | | |
| | | | % of Total Count | 9.7% 72 | 51.3% 390 | 61.0% 462 | | |
| Total | | | % within Accepted Teacher to Child Ratio | 15.6% | 84.4% | 100.0% | | |
| | | | % within Small dangerous items are out of reach | 100.0% | 100.0% | 100.0% | | |
| | | 22 | % of Total | 15.6% | 84.4% | 100.0% | | |

| Chi-Square Tests | | | | | | |
|------------------------------------|-------|----|-----------------|----------------|----------------|--|
| | Value | df | Asymp. Sig. (2- | Exact Sig. (2- | Exact Sig. (1- | |
| | | | sided) | sided) | sided) | |
| Pearson Chi-Square | .077ª | 1 | .782 | | | |
| Continuity Correction ^b | .021 | 1 | .885 | | | |
| Likelihood Ratio | .077 | 1 | .782 | | | |
| Fisher's Exact Test | | | | .895 | .445 | |
| Linear-by-Linear | 076 | 1 | .782 | | | |
| Association | | | | | | |
| N of Valid Cases | 462 | | | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 28.05.

| Crosstab | | | | | | | | |
|-------------|---|--|---|---------------------------------|---------------|--|--|--|
| | | | Children are activ | ely supervised | Total | | | |
| | | 0 | Does Not Completely Meet Standard | Completely Meets Standard | | | | |
| | High Teacher to Children | Count % within Accepted Teacher to Child Ratio | 14 7.8% | 166 92.2% | 180 100.0% | | | |
| Accepted | Ratio | % within Children are actively supervised | 25.5% | 40.8% | 39.0% | | | |
| Teacher to | | % of lotal | 3.0% | 35.9% | 39.0% | | | |
| Child Ratio | | % within | 41 | 241 | 282 | | | |
| | Low T <mark>eacher</mark> to Children Ratio | Teacher to Child Ratio % within Children | 14.5% | 85.5% | 100.0% | | | |
| | | are actively supervised | 74.5% | 59.2% | 61.0% | | | |
| : | | % of Total Count | 8.9% 55 | 52.2% 407 | 61.0% 462 | | | |
| Total | 5 | % within Accepted Teacher to Child Ratio | 11.9% | 88.1% | 100.0% | | | |
| | | % within Children are actively supervised | 100.0% | 100.0% | 100.0% | | | |
| | | % of Total | 11.9% | 88.1% | 100.0% | | | |

Accepted Teacher to Child Ratio * Children are actively

.... _ .

| Chi-Square Tests | | | | | | |
|------------------------------------|--------|----|-----------------|----------------|----------------|--|
| | Value | df | Asymp. Sig. (2- | Exact Sig. (2- | Exact Sig. (1- | |
| | | | sided) | sided) | sided) | |
| Pearson Chi-Square | 4.789ª | 1 | .029 | | | |
| Continuity Correction ^b | 4.166 | 1 | .041 | | | |
| Likelihood Ratio | 5.040 | 1 | .025 | | | |
| Fisher's Exact Test | 1 | | | .038 | .019 | |
| Linear-by-Linear | 4 779 | 1 | .029 | | | |
| Association | | | | | | |
| N of Valid Cases | 462 | | | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 21.43.

APPENDIX U

NVivo Analysis Output for Research Hypothesis 2

12/03/2018 14:58

Coding Summary By Node

Qualification Interview

12/03/2018 14:58

| Aggregate Classif | ication Coverage | Number Of References | CodingReference Number | Coded Initials | ByModified On |
|---|----------------------------------|------------------------------|--|-------------------|---------------------|
| Node | | and a second and a second of | and an and a second | | ala terreta da tala |
| Nodes\\Ope Dataset | n ended res | sponses\\Te | acher Qualificati | on\A Calli | ng |
| Internals\\T | eacher <mark>s Qu</mark> a | alification | | | |
| Yes | 0.0282 | 8 | | | |
| | | | 1 | SAE | 10/03/2018 |
| if you are not to | uched by God yo | ou can't do this w | vork | | 14:49 |
| | | | 2 | SAE | 10/03/2018 |
| I will say that pre | -sch <mark>ool car</mark> e is a | calling form the | Lord himself | | 14:50 |
| | (TA) | | 3 | SAE | 10/03/2018 15:07 |
| you will reap the | benefits in som | e future days | | | |
| | | NC | DBIS 4 | SAE | 10/03/2018 14:55 |
| we have born tea | achers | | | | |
| And and prove the law of the law | | | 5 | SAE | 10/03/2018 |
| The teaching itse | If is a sacrificial | work | | | 12:09 |
| | | | 6 | SAE | 10/03/2018 |
| it is call I will say | | | | | 14:59 |
| Benorts | Coding Summary | By Node Report | | | Page 3 of |
| nepula () | | | | | 12/03/2018 14:5 |

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| References | CodingReference Number | Coded Initials | ByModified On |
|---|---------------------------|-------------------|---------------------|
| So I think teaching as a profession is a call | 7 | SAE | 10/03/2018 14:59 |
| | 8 | SAE | 10/03/2018 |
| With children too. It is call. | | | 15:00 |

Nodes\\Open ended responses\\Teacher Qualification\Desire Dataset

Internals\\\Teachers Qualification

| Yes | 0.0894 14 | | | |
|--------------------|-------------------------------|------------------------|-----|---------------------|
| think the perso | on's desire in the work | | SAE | 10/03/2018 14:46 |
| I think that one | e desire counts | 2 | SAE | 10/03/2018 14:47 |
| If you the perso | n has the desire | 3 | SAE | 10/03/2018 14:47 |
| if you are not p | patient enough you can't hand | 4 lle this children | SAE | 10/03/2018 14:48 |
| it is there if you | are not patient | NOBIS | SAE | 10/03/2018 14:49 |
| if you don't have | re passion you can't do. | 6 | SAE | 10/03/2018 14:50 |
| | committed and selfless to sel | 7 | SAE | 10/03/2018 14:54 |
| | | 8 | SAE | 10/03/2018 14:56 |
| If it is being put | into practice. | 9 | SAE | 10/03/2018 14:59 |

367

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The teaching itself is a sacrificial work

| Reports \\Cooling Summary By Node Report | | | Page 4 of 6 |
|--|-----------------|-------------|-------------------------------|
| | | | 12/03/2018 14:5 |
| AggregateClassificationCoverageNumber Of Codir | Reference | Coded | Public different Con |
| References | Number | Initials | ByModified On |
| ou should love the job. | 10 | SAE | 10/03/2018 15:01 |
| | 11 | SAE | 10/03/2018 15:01 |
| You should be someone who actually loves to be with the | children. | | |
| | 12 | SAE | 10/03/2018 |
| I believe in the willingness, | | | 15.05 |
| | 13 | SAE | 10/03/2018 15:03 |
| f you are willing to help them | | | |
| | 14 | SAE | 10/03/2018 15:04 |
| the willingness of the person to just to understand them | | | 13.04 |
| Internals\\Teachers Qualification Yes 0.0715 8 | 1 | SAE | 10/03/2018 14:50 |
| but by skills or by training | | | |
| | 2 | SAE | 10/03/2018 14:51 |
| I always say that teaching is a skill that we need | | | |
| | 3 | SAE | 10/03/2018 14:52 |
| when it comes to a these people so it is a skill. | 4 | SAE | 10/03/2018 |
| Yes because if the teacher has no training about what he | or she is doing | ş | 14.73 |
| | 5 | SAE | 10/03/2018 |
| These children are been handled with somebody who | nas experience | mother wh | 14:55 |
| and all that | | , mother wi | 14:55 to understand childr |

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To be able to love kids, you should have experience of such situations

| Reports\\Coding Summary By Node Repo | rt | | Page 5 of 6 |
|---|---|-------------------|------------------|
| Aggregate Classification Coverage Number | | | 12/03/2018 14:58 |
| References | Of CodingReference ^s Number | Coded Initials | ByModifled On |
| | 7 | SAE | 10/03/2018 |
| So having the training is a different thing | | | 15:03 |
| | 8 | SAE | 10/03/2018 |
| there are certain things that are practical | | | 15:04 |
| | | | |

Reports\\Coding Summary By Node Report

Page 6 of 6



