



**CAREGIVERS' SAFETY PRACTICES REGARDING UNINTENTIONAL POISONINGS
AMONGST PRESCHOOL CHILDREN IN THE ELIAS MOTSOALEDI SUB-DISTRICT
OF LIMPOPO PROVINCE**

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DECLARATION

I hereby wish to declare that this dissertation “Caregivers’ safety practices regarding unintentional poisoning amongst preschool children in Elias Motsoaledi Sub-district of Limpopo Province” is genuine original work done by me under the guidance of my supervisors Mrs S Rossouw and Dr C Maree at the University of Pretoria Nursing Department.

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BUSISIWE JANE MASEKO



ABSTRACT

CAREGIVERS' SAFETY PRACTICES REGARDING UNINTENTIONAL POISONING AMONGST PRESCHOOL CHILDREN IN THE ELIAS MOTSOLEDI SUB-DISTRICT OF LIMPOPO PROVINCE

ABSTRACT

Aim: The study was to explore and describe caregivers' safety practices regarding unintentional poisoning in preschool children in the Elias Motsoaledi Sub-district, Limpopo Province.

Background: Unintentional poisoning remains a global concern and is one of the leading causes of morbidity and mortality amongst preschool children. Although in the literature review, some authors show a decline of poisoning in different countries, the emergency and paediatric departments still admits children with poisonings from different agents.

In response to increasing admissions of preschool children with poisoning in the paediatric department, this study was conducted to explore and describe caregivers' safety practices regarding unintentional poisoning amongst preschool children in the Elias Motsoaledi Sub-district, Limpopo Province. The researcher had no prior information concerning safety practices of caregivers in Elias Motsoaledi Sub-district.

Methods: The methodology utilised was a qualitative approach to explore and describe safety practices concerning unintentional poisoning within the local context. The target population were caregivers with preschool children residing in the Elias Motsoaledi sub-district in Limpopo province. Purposive sampling was used to select 57 caregivers with preschool children who received their healthcare services in four Primary Health Care clinics. Data collection was through conducting eight (8) focus group interviews, each comprising of five (5) to twelve (12) participants. Data was analysed using qualitative content analysis.



Findings: Three themes emerged that were 1) Indoor safety practices, 2) Outdoor safety practices 3) and Consideration of child's developmental skills. These showed that caregivers' safety practices concerning unintentional poisoning remains a challenge. There seemed to be a limited awareness of environmental safety hazards, limited knowledge of best indoor and outdoor safety habits and supervision of preschoolers at home to prevent unintentional poisoning.

Conclusion: The recommendations made were in the form of health information and education (pamphlets, posters, workshop and radio broadcasts) of good indoor and outdoor safety practices to prevent unintentional poisoning in preschool children shared with the community and stake holders. In addition the findings of the research will be used to inform the reviewing of local prevention of childhood emergencies guidelines and further research into factors which influence unintentional poisoning. In conclusion the sharing of health information and education regarding the safe indoor outdoor practices with caregivers may improve their knowledge and therefore prevent unintentional poisoning in preschool children.



1 CHAPTER1: ORIENTATION TO THE STUDY

1.1. INTRODUCTION

The vulnerability of preschool children to poisoning relates to their developmental capabilities and milestones. Children in this age group are curious and like to explore and discover their immediate environment, but do not understand or perceive danger associated with their environment (Balan & Lingam 2012:35; Schemertmann, Williamson & Black 2012:2; Veale, Wium & Müller 2013:295). It is reported by Gutierrez, Negron & Garcia-Fragoso (2011:847) that parents and caregivers do not always practice prevention strategies for the safety of their preschool children, which may contribute to the unintentional poisonings. Examples of poisonings which can be ingested are drugs, paraffin (kerosene), household products, pesticides, herbal medicines and environmental toxins such as plants and hydrocarbons (Gutierrez et al. 2011:845, Poison Control Centre 2011:4).

As a child nurse practitioner, the researcher often admits children suffering from unintentional poisoning. On admission remarks from the caregivers might be "I was not around", "the child ingested it from my neighbour" ..., "I just took my eyes off for a few minutes", and "I don't know how he reached that far to open the container". These kind of remarks were also found by Rosenberg, Wood, Leeds and Wicks (2011:217). These remarks reflect the accidental nature of unintentional poisoning which can be prevented.

The overall aim of the study was, therefore, to explore and describe caregivers' safety practices regarding unintentional poisoning in preschool children in the Elias Motsoaledi Sub-district Limpopo Province.

This chapter outlines the background, aims, research question, research problem and methodology used for conducting this study.



1.2. BACKGROUND AND RATIONALE

Globally, unintentional childhood poisonings constitute a significant cause of morbidity and mortality in preschool children (Chandran, Hyder & Peek-Asa 2010:118).

Unintentional childhood poisoning results in almost 40% of deaths in the age group one to four (Kamal 2013:1). It is known to be the fourth leading cause of unintentional injury worldwide (Ahmed, Fatmi, Siddiqui & Sheikh 2011:27). The insight of caregivers in child development can influence supervision of children as well as their safety practices (Schmertmann, Williamson, Black & Wilson 2013:2). The perceptions of caregivers regarding the toxicity of substances are sometimes inaccurate (Gutierrez et al. 2011:847) and caregivers often do not recognise the children's vulnerability to hazardous materials in their own home (Gaines & Schwebel 2009:1070). Therefore children who can explore their environment require better supervision and protective storage practices to prevent poisoning (Schmertmann et al. 2013:2).

Preschool children are the largest group of children who are affected by poison ingestion in countries such as the United States of America (Abbas, Tikmani & Siddiqui 2012:331 and Poumand, Wang & Mazer 2012:1), Australia (Schemertmann, Williamson & Black 2012:1), Finland and Botswana Hoikka, Liisanantti and Dunder (2013:1) and Kasule and Malangu (2009:22) supported the statement that most poisoning is occurring in children one (1) to four (4) yrs. Developing and low income country children under five years of age are highly vulnerable to poisoning incidents (Ahmed, Fatmi, Siddiqui & Sheikh 2011:27). Bangladesh, Columbia, Egypt and Pakistan (Hyder, Sugerman, Puvanachandra, Razzak, El Sayed, Isaza, Rahman & Peden 2009:345, 348). All the aforementioned authors reflect that unintentional poisoning contributed to an increase in mortality and morbidity in preschool children.

Limited evidence is available on incidence rates for childhood poisonings in South Africa (Veale et al. 2013:293; Balme & Roberts 2013:24; Balme, Roberts, Glasstone, Curling & Mann 2012:142).

The researcher is a child nurse practitioner who works in the paediatric unit in a regional hospital in the Elias Motsoaledi Sub-district in Limpopo Province. The researcher observed an increase in admission rates for preschool children into the regional hospital after unintentional poisoning (view Table 1.1). The preschool children mostly come from the villages which are catchment areas of Gateway, Elandsdoring and two mobile clinics.

The following table provides a summary of preschool children admitted to the regional hospital from January 2014 to March 2015 after unintentional poisoning.

Type of unintentional poisoning	Number of children admitted after unintentional poisoning during 2014												Admissions for the first three months of 2015			Total per type of poisoning	Related deaths
	January	February	March	April	May	June	July	August	September	October	November	December	January	February	March		
Paraffin	15	17	10	5	2	4	4	1	5	7	7	15	4	10	10	116	0
Drugs	3	3	4	2	0	6	1	0	2	2	2	2	0	0	0	27	0
Organic phosphate	0	0	0	0	1	0	0	0	0	5	0	0	0	0	0	6	0
Herbal medication	4	1	1	0	0	1	0	1	0	0	0	2	0	1	1	12	3
Plants and wild fruits	13	0	1	0	0	2	8	6	2	1	2	0	10	21	3	69	0
Other types	3	2	2	7	0	0	6	1	3	2	4	1	1	3	1	36	0
Food	4	0	3	0	0	0	0	3	0	0	0	0	0	0	0	10	0
Unknown type of poisoning	0	5	0	6	0	0	0	0	1	3	4	0	3	1	7	30	0
Total number of admissions per month	42	28	21	20	3	13	19	12	13	20	19	20	18	3	22	306	3

Table 1.1: Summary of preschool children who were admitted from January 2014 to March 2015 in the regional hospital after unintentional poisoning.



1.3. PROBLEM STATEMENT

The researcher was concerned about the admission rates of preschool children from unintentional poisoning by different agents in the paediatric unit in one of the hospitals in Elias Motsoaledi Sub-district in Limpopo Province (view Table 1.1). It is stated by Gheshlaghi, Piri-Ardakani, and Behjati (2013:189) that mortality in developing countries is often related to fatal unintentional poisoning. If the child does not die, poisoning not only results in long-term psychological and physical consequences, it also has a financial impact on the healthcare system (Ahmed et al. 2011:27; Meyer, Eddleston, Bailey, Desel, Gottschling & Gortner 2007:267).

Young children are more prone to unintentional poisoning as they are inquisitive, mobile and like to explore, yet they do not understand the dangers in poisonous substances. Many of the unintentional poisonings in young children can, therefore, be prevented if caregivers create safe homes and preschool environments (Schemertmann et al. 2012:2). This implies that the caregivers should understand the children's vulnerability and abilities, as well as safety prevention of unintentional poisonings.

In the United States of America, there are various educational materials available with the aim to prevent child poisoning, with little evidence on the effectiveness of these programmes (Rodgers & Condurache 2011:10). Another key factor for consideration in unintentional poisoning in this age group is caregivers safety practices to prevent incidences. (Gutierrez et al. 2011:845; Tsoumakas, Dousis, Mavridi, Gremou & Matziou 2009:379).

This has been recognized as a gap in literature and reports about unintentional poisoning. Therefore this study sought to explore and describe caregivers' safety practices regarding unintentional poisoning of preschool children in the Elias Motsoaledi Sub-district in Limpopo Province. The researcher chose to collect data from



the attendees of clinics to know how they practice safety in the prevention of unintentional poisoning in preschool children.

Furthermore, several preventive strategies and interventions had been implemented to protect young children from poisoning (Gutierrez et al. 2011:845; Tsoumakas ,et al. 2009:379), but limited information is available about caregivers' safety practices with regard to unintentional poisoning in preschool children. The rate in which preschool children are being admitted in the context of this study, is alarming. The researcher explored the caregivers' safety practices regarding unintentional poisoning of preschool children in the Elias Motsoaledi Sub-district.

1.4. RESEARCH QUESTION

The following research question was formulated to guide data collection in this study:

What are the safety practices of caregivers regarding unintentional poisoning in preschool children in the Elias Motsoaledi Sub-district in Limpopo Province?

1.5. AIM

The overall aim of the study was to explore and describe caregivers' safety practices regarding unintentional poisoning in preschool children in the Elias Motsoaledi Sub-district, Limpopo Province.

1.6. SIGNIFICANCE AND BENEFITS OF THE PROPOSED STUDY

The study is important for the following reasons:

- The findings were advantageous in identifying some gaps in safety practices of caregivers regarding unintentional poisoning in preschool children in Elias Motsoaledi Sub-district in Limpopo Province (view Chapter 3).

- This study provides information about the safety practices of caregivers and contributes to preventive measures for unintentional poisoning amongst preschool children in Elias Motsoaledi sub-district.

1.7. DELIMITATIONS

The study was contextual and included only caregivers of preschool children who live in the fourteen villages of Elias Motsoaledi Sub-district in Limpopo Province. Health care services are provided by Gateway, Elandsdoorn and two mobile clinics. The purpose was not generalization.

1.8. ASSUMPTIONS

Assumptions are fundamental principles that are believed to be accurate without proof or verification (Polit & Beck 2014:7). The constructivist paradigm recognises the inherent complexity of humans, their ability to shape and create their own experiences and the idea that truth is a composite of realities (Polit & Beck 2012:14).

Table 1.2 A summary of the assumptions as applied in this study

Type of assumption	Assumptions of constructivist paradigm (Polit & Beck 2014:7; LoBiondo-Wood & Haber 2010 86-87)	Application in the study
Ontological: What is the nature of reality?	Reality is multiple and subjective mentally constructed by individuals	Safety practices of caregivers with regard to unintentional poisoning by preschool children are influenced by multiple factors related to the individuals, environment and dynamics of the situation (view Chapter 3)
Epistemological: How is the researcher related to the research participants ("those being researched?")	The researcher interacted with those who participated in the study and findings were the creation of interactive processes	The researcher interacted with the caregivers through focus group interviews to obtain information on their safety practices regarding unintentional poisoning (view Annexure B)
Axiological: What is the role of values of the participant in the inquiry?	Subjectivity and values are inevitable and desirable	The researcher recognised her values as well as the caregivers' values. The caregivers' values are expected to influence their safety practices regarding unintentional poisoning in young children



		and therefore were accepted as part of the results. The researcher's values though were bracketed by clarifying her values prior to the focus groups and deliberately remained neutral during the focus group interviews and the analysis of the data (view Chapter 3)
Methodological: How is evidence best obtained?	Inductive processes are followed with an emphasis on the whole; subjectivity and non-quantifiability is accommodated. Emerging flexible insight is grounded in the experiences and views of the participants. The research is context-bound. Information is in a narrative form where data are analysed through qualitative analysis to seek for in-depth understanding	Focus groups were conducted where the caregivers were invited to share information on their safety practices regarding unintentional poisoning in preschool children. The focus groups were transcribed verbatim and analysed through inductive reasoning applying the principles of qualitative analysis. The report of the findings was in narrative format to contribute to in-depth understanding (view Chapter 3)

1.9. DEFINITION OF KEY TERMS

The following key terms are defined and applied in this study:

1.9.1. Caregivers

Caregivers are people who care and protect others from harm and discomfort (LoBiondo-Wood & Haber 2010:247). In this study, a caregiver was regarded as a person who looked after and took care of a preschool child. Application in this study included parents as well as essential others who were taking care of preschool children.

1.9.2. Poisoning

Poisoning is defined as the exposure to potentially harmful substances that are not intended for use by the exposed person (Rodgers & Condurache 2011:1) and that are harmful to the body after being ingested, inhaled, injected or absorbed through the skin (Gutierrez, et al 2011:846). In this study, poisoning refers to any substance deemed to be poisonous to preschool children that they can ingest.



1.9.3. Safety practices

Safety is defined as the condition of being safe or representing something to prevent injury or damage (Stevenson & Waite 2011:1267). Practice is defined by Stevenson and Waite (2011:1127) as the customary or expected procedure or way of doing something. The study, regarded safety practices as the way caregivers function at home in the prevention of unintentional poisoning in preschool children.

1.9.4. Preschool children

A preschool child, according to Stevenson and Waite (2011:1134), is a child who is not yet old enough to go to primary school and can still be in a nursery or kindergarten school. Ebrahim and Irvine (2012:6) defined a preschool child as someone who is under six years of age and not yet attending formal school. In this study, a preschool child refers to all children who are under six years of age.

1.9.5. Unintentional poisoning

The definition of Stevenson and Waite (2011:739, 1579) refers to unintentional as non-purposeful. In children, Gevaart-Durkin, Swart and Chowdhury (2014:3) regard unintentional poisoning as the non-intentional intake of poisonous substances. This study focuses on unintentional poisoning in preschool children which is regarded as non-purposeful or non-intentional.

1.10. LITERATURE REVIEW

Unintentional poisoning is the most common paediatric emergency and cause of mortality and morbidity in developed and developing countries among children worldwide (Ragab & Al-Mazroua 2015:1; Nabiha, Hayati & Hejar 2015:191; Crosslin & Tsai 2015:1; Bakhaidar, Jan, Farahat, Attar & Abuznadah 2014:1; Khajeh, Narouie, Noori, Emamdadi, Ghasemi Rad, Kaykha & Hanafi-Bojd 2012:19; Manzar, Ali Saad, Manzar & Fatima 2010:1; Kasule & Malangu 2009:22). Poisoning also results in substantial



numbers of hospital admissions in children (Ragab & Al-Mazroua 2015:1; Wyn, Zou, Young, Masjak-Newman, Hawkins, Kay, Mhizha-Murira, & Kendrick 2015:3).

Studies indicate that poisoning in the paediatric population accounts for 0.23 to 3.3 percent of all poisonings (Khajeh et al. 2012:19). In India, it accounts for 1-6% of bed occupancy in paediatric units and 3.9% in paediatric intensive care units (Aggarwal, Kumar-Rana & Chhavi 2014:174). In Botswana, poisoning contributes to 6.7% of total injuries and is ranked third in the country (Kasule & Malangu 2009:22).

The most significant types of poisoning agents are common household substances such as drugs, vitamins, cosmetics, cleaning products, natural toxins, chemical products, alcohol, herbal medicines and agrochemicals (Gutierrez et al. 2011:846; Kasule & Malangu 2009:24). Kerosene, medicine, household chemicals and insecticides are the primary cause of unintentional poisoning in children younger than five years (Ragab & Al-Mazroua 2015:2; Ahmed, Fatmi & Siddiqui 2011:1). Several studies indicate that paraffin (kerosene) is the most common poison ingested by children in developing countries (Sekar, Anjan-Kumar, Sivaramudu, Ravi Kumar, & Kiran Kumar. 2015:28; Chandran, Hyder & Peek-Asa 2010:113). The researcher also perceived this trend in the setting where she works as a child nurse practitioner (view Table 1.1).

Schmertmann et al. (2012:2) indicate that there is a relationship between the age of the child and the type of substance ingested. Poisoning in toddlers and infants is almost always unintentional, secondary to their explorative behaviour and inclination to place objects in the mouth (Schemertmann et al. 2013:15; Peden, Oyegbite, Ozanne-Smith, Hyder, Branche, Rahman, Rivara & Bartolomeos 2008:129; Meyer et al. 2007:254). Children from the age of nine months can reach, grasp and manipulate small objects, which puts them at higher risk for unintentional poisoning (Schmertmann et al. 2012:4).

Gender is also identified as a factor to take into consideration as boys tend to be more impulsive and at higher risk for poisoning than girls (Sekar et al. 2015:28; Balan & Lingam 2012:35-36; Ahmed, Fatmi & Siddiqui 2011:1; Kasule & Malangu 2009:22).



Supervision decisions and safety practices can be influenced by a caregiver's perception of the child's level of development. Parents sometimes believe that their children are smarter, their development is more advanced and their ability to follow safety rules is better than their peers (Schemertmann et al. 2013:15; Gaines & Schwebel 2009:1073). Lack of close supervision is also identified as a risk factor and education to caregivers of children should focus on the benefits of close interaction with a child as a prevention measure, as well as supervision over poison storage practices (Schmertmann et al. 2012:7).

The incidence of poisoning among children is probably ascribed to nuclear families, attractive containers, less supervision and ignorance about numerous new products (Sowmya, Shreedhara, Varghese, & Sanjeeva 2014:1418), quantity and quality of supervision (Schwebel, Wells & Johnston 2014:1). Gaines and Schwebel (2009:1070) indicates that some parents are unable to recognise and eliminate hazards present in their homes. Storing cleaning solutions or other chemicals in recycled containers such as familiar bottles is a common custom in developing countries (Crosslin & Tsai 2015:3). In Australia, the type of substances ingested by children is associated with unsafe storage practices (Schmertmann et al. 2012:7). In Athens, parents' adherence to safe practices has been identified as primary strategies for significant reduction in domestic poisoning incidences (Tsoumakas et al. 2009:373). Morrongiello and Kiriakou (2004:286) indicate that efforts to prevent poisoning in young children focus primarily on caregivers and home environments. However, it is challenging to motivate parents to engage in safety practices. In the USA, caregivers demonstrate inadequate knowledge about the home poisoning prevention strategies and only 20% of the participants in a study knew the telephone numbers of the Poison Control Centre (Gutierrez et al. 2011:845). In Pakistan, households with more than three siblings and illiterate caregivers have a majority of the poisoning incidences (Manzar, Ali Saad, Manzar & Fatima 2010:5).

Unintentional poisonings can be prevented through modification of the household environment (Sekar et al. 2015:28, Chandran Hyder & Peek-Asa 2013:1114). Wyn et al. (2015:4,25) found that very few reviews explicitly focused on preventing unintentional



poisoning in childhood. Thus further research is needed to assess the effectiveness of non-legislative interventions in reducing poisoning. Glenn (2014:395) is of the opinion that by focusing on poison prevention efforts on preschool children, the mortality and morbidity can be decreased in this vulnerable age group. However, the prevalence of unintentional poisoning is still a wide spread incidences.

To formulate recommendations, it was important first to explore and describe what are the current safety practices of caregivers, regarding unintentional poisoning in preschool children in Elias Motsoaledi Sub-district in Limpopo Province. (view Chapter 3).

1.11. METHODOLOGY

A qualitative method with descriptive, explorative and contextual designs was utilised in this study. The researcher focused on human experiences and views, of individuals (LoBiondo-Wood & Haber 2014:111), namely caregivers' safety practices regarding unintentional poisoning in preschool children at Elias Motsoaledi Sub-district in Limpopo Province.

1.11.1. Study design

A design is a plan or a blueprint for conducting a study to obtain answers to the research questions (Polit & Beck 2012:58; LoBiondo-Wood & Haber 2010:577). The design was explorative, descriptive and contextual (LoBiondo-Wood & Haber 2014:100). Polit and Beck (2012:18) state that an exploratory design includes aspects such as the full investigation into the phenomenon presented as well as factors related to the phenomenon. A descriptive design was utilised to describe in-depth information about the phenomenon under study (de Vos, Strydom, Fouché & Delpont 2011:96).



Stevenson and Waite (2011:308) define context as the conditions that form the setting for an event, statement or idea. The context in this study referred to four community clinics in the Elias Motsoaledi Sub-district in Limpopo Province where caregivers take their preschool children for health services.

The researcher explored and described in depth the richness of the phenomenon as it happens in a specific context, namely in Elias Motsoaledi Sub-district in Limpopo Province. Participants shared their views and knowledge of safety practices regarding unintentional poisoning amongst preschool children in Elias Motsoaledi Sub-district in Limpopo province.

1.11.2. Study setting

The study setting refers to a place where participants are recruited or a point of contact with people having the same traits and where data is collected (LoBiondo-Wood & Haber 2014:101). Research that takes place in naturalistic settings involves an interpretative and naturalistic approach in an attempt to make sense and interpret phenomenon regarding the meaning people bring to the study (LoBiondo-Wood & Haber 2014:96; Polit & Beck 2012:49).

This study was conducted in a rural area in four Clinics which are: Gateway, Elandsdoring Clinics and two mobile Clinics in Elias Motsoaledi Sub-district in Limpopo Province where caregivers of preschool children from the surrounding areas receive their health care services. The preschool children who were admitted to the paediatric unit in the regional hospital with unintentional poisoning were referrals from the above-mentioned clinics.

The rising prevalence regarding unintentional poisoning was initially identified in the paediatric unit of the regional hospital. Therefore the decision was made to identify caregivers' safety practices before admission, to develop, explore and describe these practices and formulate recommendations. The caregivers attending the clinics were,



identified as the most suitable participants who had the best knowledge of safety practices regarding unintentional poisoning amongst preschool children.

1.11.3. Population and sampling

The population is the entire aggregation of cases in which a researcher is interested (Grove, Burns & Gray 2013:351; Polit & Beck 2012:273; LoBiondo & Wood 2010:221). In this study, the population included all the caregivers of preschool children residing in Elias Motsoaledi Sub-district in Limpopo Province.

The accessible population is the aggregate of cases that conform to the designated criteria and are accessible to the study (Polit & Beck 2012:274; Grove, Burns & Gray 2013:351). In this study, the accessible population were all caregivers, educated and/or uneducated, middle and/or low socio economic class looking after preschool children, who received health care services at the Gateway Clinic, Elandsdoorn Clinic and two mobile Clinics in the Elias Motsoaledi Sub-district in Limpopo Province.

The term participant was used in the study to describe the sample. A sample were the participants that the researcher used to answer the research question during the collection of data (Polit & Beck 2012:275). Purposive non-random sampling was utilised where participants were selected for the benefit of the study.

The following inclusion criteria were identified and applied:

- Caregivers of preschool children and who live with the child in the same house;
- Caregivers who visit the above-mentioned clinics as they were accessible to the researcher;
- Caregivers who speak Zulu, Sotho or English as these are the three languages the researcher understands and
- Caregivers who were 18 years or older.

The exclusion criteria were as follows:

- Caregivers with children over the age of six years and/attending school and



- Caregivers who were under 18 years.

The researcher negotiated access and visited Gateway Clinic, Elandsdoorn Clinic and two mobile Clinics in the Elias Motsoaledi Sub-district in Limpopo Province (view Chapter 2 and Table 2.1). At each site, the aim of the study, was explained, recruited and invited five (5) to twelve (12) caregivers to participate in the study. The consenting participants formed a focus group, and an interview was conducted to explore and describe the caregivers' safety practices with regard to unintentional poisoning by preschool children.

The participants who showed an interest were given information leaflets. Before signing the informed consent form, the researcher ensured that the participants understood the purpose of the study as well as their rights (view Annexure C).

1.11.4. Data collection

Before data collection, the researcher requested permission from the Research Ethics Committee of the Faculty of Health Sciences of the University of Pretoria, the Department of Health Research Committee of Limpopo Province, and selected clinics managers (view Annexure E, F and G).

In qualitative studies, data collection is more emerging as decisions about what to collect and to probe evolve in the field (LoBiondo-Wood & Haber 2014:101; Polit & Beck 2012:532). Focus group interview was selected as a data collection method to able to collect diverse view points, knowledge and experience of the participants to enhance the depth and richness of data. In this study, the researcher conducted eight focus group interviews of five (5) to twelve (12) participants of caregivers' safety practices regarding unintentional poisoning in preschool children at the Elias Motsoaledi Sub-district in Limpopo Province. The interviews were audio-recorded and field notes were written during interviews (view Chapter 2, Chapter 3 and Annexure K).



A focus group interview occurs when a group of participants is assembled to answer questions on a given topic (Polit & Beck 2012:728). In this study, the researcher invited caregivers to participate. Participants were selected when they visited the Gateway Clinic, Elandsdoorn Clinic and two mobile Clinics in the Elias Motsoaledi Sub-district in Limpopo Province for health services. The environment was known to the participants and therefore it was favorable.

Also by explaining the aim of the study, the environment was rendered to be conducive for data collection. Adherence to ethical principles of research enhanced faithfulness and trust during data collection. Interviews were conducted by the researcher in Zulu, Sepedi and English (as a preference by participants). Zulu and Sepedi are the most frequently spoken languages in Elias Motsoaledi Sub-district in Limpopo Province.

The researcher organised and booked a private room at each clinic which has less noise and was adequate for recording the interviews. Furniture was arranged with enough chairs in a circle to enhance conversation (view Figure 2.2). Refreshments for caregivers and sweets for children were available as eating together tends to promote conversation and communication within the group.

Suggestions by Polit and Beck (2012:542) on how to conduct a focus group interview were followed. The researcher started by greeting the participants and allowing everyone to introduce themselves as an ice breaker. Pertinent information about the study was shared, ensuring that the participants understood the concepts poisoning, safety practices and preschool child. The participants were requested to complete the demographic information questionnaire form. The researcher posed the main question to the participants, namely:

“What are you doing at home to make sure that your small child/(ren) will not eat or drink anything that is harmful?”

After obtaining answers to the main question, the researcher used probing questions to get in-depth information (view Annexure B).



Gratitude was shown to the participants after the focus group interviews. The participants were invited to have more refreshments before leaving the interview venue. The researcher and field worker wrote reflective notes immediately after the participants left to capture any ideas that may have been of relevance (view Chapter 2) to this study.

1.11.5. Data management and analysis

The researcher and field worker collected data utilising an audio tape and field notes. The recorded data were transcribed verbatim for analysis. The purpose of data analysis was to organise, provide a structure and elicit meaning from the collected data (Polit & Beck 2012:556; LoBiondo-Wood & Haber 2014:114). The researcher analysed the content of narrative data of the groups to find meaning related to themes and sub-themes (Polit & Beck 2012:564) (view Chapter 3).

The researcher analysed the data using content analysis through inductive and deductive reasoning. In this study, the researcher read the caregivers' narratives to acquire a feeling for their perceptions, to fully understand the given information. The researcher scrutinised the data carefully reading it over and over in search of meaningful understanding. The concepts or phrases were highlighted (view Chapter 3).

The findings were described in narrative format, and emerging understanding and findings were reported in writing (view Chapter 3). The audio tapes and hard copies will be stored, as well as all computerised information for 15 years as required by the Research Ethics Committee.

1.12. TRUSTWORTHINESS

Trustworthiness is defined by Polit and Beck (2012:745) as the degree of confidence qualitative researchers have in their data, assessed by the criteria of credibility,



transferability, dependability, confirmability, and authenticity. Ethical considerations, as applicable in this study. A discussion of trustworthiness as applicable to this study follows:

1.12.1. Credibility

Credibility refers to confidence in the truth of the data and interpretations thereof. Lincoln and Guba view credibility as the overriding goal of qualitative research (Polit & Beck 2012:585). In this study, believability was enhanced through prolonged engagement, persistent observation and source triangulation.

Credibility was enhanced by the researcher's prolonged engagement who understood and works in the context or setting of the phenomenon. Persistent observation was enhanced by focusing on the aspects of the situation, source triangulation by using four different focus groups (view Chapter 2).

1.12.2. Dependability

Dependability refers to stability or reliability of the data over time and conditions (Polit & Beck 2012:585). In this study, dependability was enhanced by the strategies of enhancing credibility.

1.12.3. Confirmability

Confirmability refers to the objectivity or neutrality of data and interpretations to ensure the integrity of inquiry. Confirmability also refers to data accuracy, relevance or meaning (Polit & Beck 2012:585). In this study, thick descriptions of the data were conducted as well as the availability of an audit trail to make it possible for any person interested to determine confirmability of the study. (view Chapter 2).



1.12.4. Transferability

Transferability is the extent to which findings can be transferred to or have applicability in other settings or groups (Polit & Beck 2012:585). Transferability was not the purpose of this study, however the researcher provides sufficient descriptive data so that other researchers can evaluate the applicability of the data to other contexts (view Chapter 2).

1.12.5. Authenticity

Authenticity refers to the extent to which the researchers justly and faithfully show a range of realities (Polit & Beck 2012:585). The researcher made the evidence available to confirm authenticity (view Chapter 2 and view Annexure K).

1.13. ETHICAL CONSIDERATIONS

Ethical considerations, as applicable in this study will be in-depth discuss in this chapter.

Ethics refers to the theory or discipline dealing with principles of moral values and moral conduct (LoBiondo-Wood & Haber 2010:247). Polit and Beck (2012:727) state that ethics is a system of moral values that is concerned with the degree to which research procedures adhere to the professional, legal and social obligations of the study participants.

Approval was sought prior to data collection from the Research Ethics Committee of the Faculty of Health Sciences of the University of Pretoria, the Department of Health Research Committee of Limpopo Province. The proposal was also loaded in the National Health Research Department site per request of the Limpopo Province. Approval was also sought from the Primary Healthcare Departments in selected Clinics. (view Annexure E, F and G).



Standards of ethical conduct in research were adhered as specified in. (Polit & Beck 2012:152). The following principles were followed:

1.13.1. Voluntary participation

Participants were given essential information about the study and were asked to participate voluntarily (Burns & Grove 2009:204). In this study, participation leaflets were given to participants for voluntary participation (view Annexure C). The verbal explanation was given in Zulu, Sepedi and English for better understanding. Forms and pens were given to be utilised when filling in the leaflets for those who voluntarily agreed to participate (view Annexure C).

1.13.2. Confidentiality

Confidentiality is a pledge that information of the participants will not be publicly reported in a manner that identifies them and will not be accessible to others (Polit & Beck 2012:162). Anonymity is the most secure means of protecting confidentiality when the researcher does not link participants to their data.

The researcher explained to different focus groups in each site that confidentiality would be maintained. For formality reasons, numbers were given to them to be used for general descriptions when being addressed during interviews as is also a culture of showing respect. During data transcription also extra precaution was ensured by using alphabets and numbers for sustaining confidentiality of participants. Participants were assured verbally and as written in the informed consent that the information they provided was not to be used against them during the study and in the future.

1.13.3. Beneficence

Beneficence is a fundamental ethical principle that seeks to maximise benefits for study participants and prevent them from harm and discomfort (Polit & Beck 2012:721). The research is non-experimental, and harm and discomfort were limited,



if any. The researcher was prepared to terminate the study if continuation resulted in undue distress or harm to the participants.

Participants would benefit by being educated on how to practice safety regarding unintentional poisoning in preschool children through recommendations (view Annexure H and Annexure I). Knowing the safety practices lead to the identification of challenges and recommendations to benefit the preschool children (view Chapter 4).

1.13.4. Respect for human dignity

Respect for human dignity is an ethical principle and that includes the right to self-determination and the right to full disclosure (Polit & Beck 2012:154). The invited participants could voluntarily decide whether to take part in the study without risk of prejudicial treatment. In this current study, during voluntarily signing of informed consent forms, the participants were informed about their rights as participants. The participants were given a right to ask questions, to refuse to give information and to withdraw from the study anytime they wanted to (view Annexure C). During this study no eligible participants withdrew from the study and information was given by participants voluntarily. Only two participants who volunteered but did not fit the eligible criteria, were requested by the researcher, politely, to withdraw from the study.

1.13.5. Justice

Justice is the principle in the Belmont Report which includes the participants' right to fair treatment and right to privacy (Polit & Beck 2012:155). The researcher demonstrated respect for the beliefs, habits, and lifestyles of participants from different backgrounds or cultures. The researcher was obliged to offer clarification and afford participants courteous and tactful treatment at all times. The researcher did not violate any participants' responses by linking them to their identity. The researcher maintained the privacy by not intruding on participant's privacy; by asking questions that was out of the context. The researcher did not violate any participants' responses by linking them with their identity numbers. Participants' names were not used when

reporting findings. Findings were known to the researcher, the supervisors , ethical department and health department.

1.14. LAYOUT OF THE STUDY

The layout of this study is arranged in Chapters and Annexures. This study consists of four chapters. Figure 1. 3 provides a schematic overview of the study's layout.

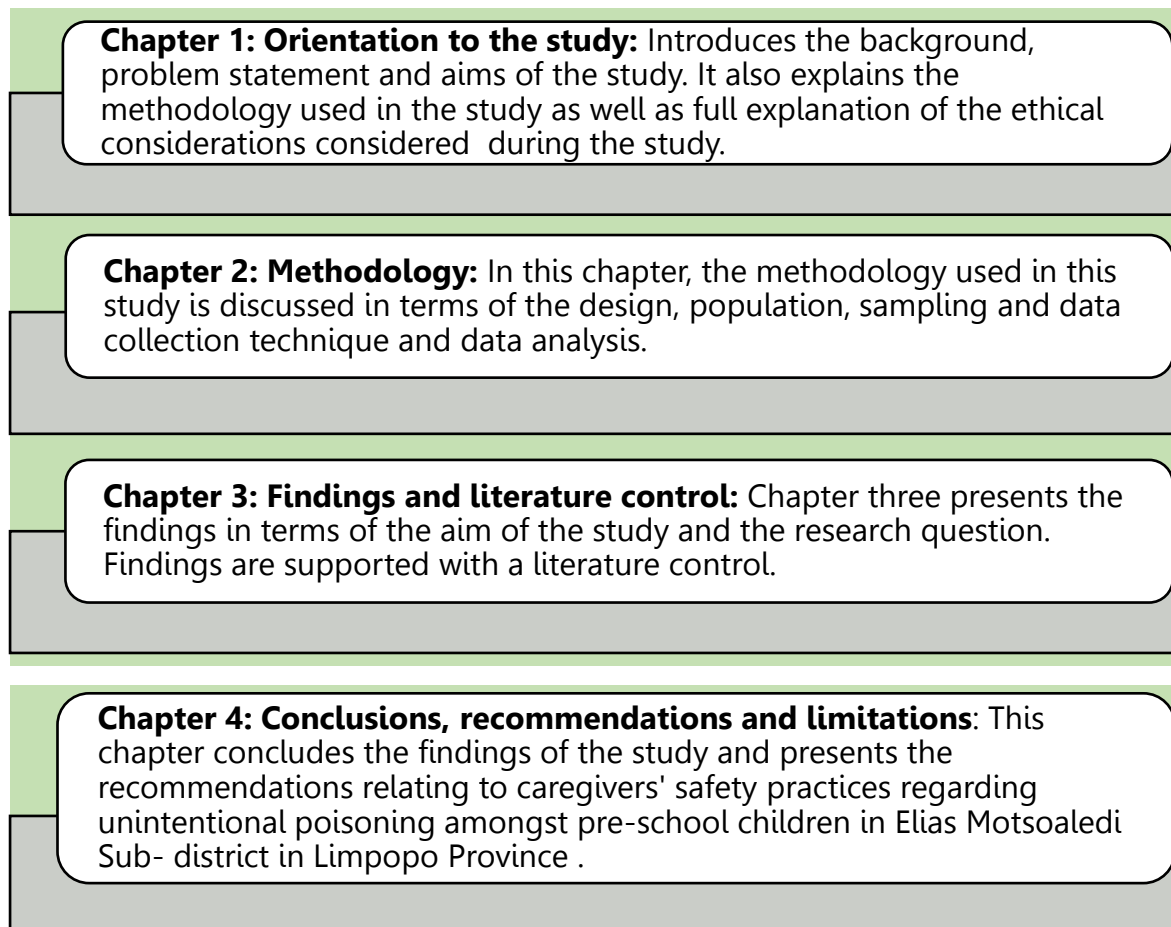


Figure 1.1: Schematic overview of the study.



1.15. REPORTING OF RESULTS

The researcher reported the results in the following manner: -the completion of the dissertation of the study is the first step; followed by the writing of an article about the study; and the presentation of the research study at a conference.

Furthermore, the investigator mitigated factors contributing to unintentional poisoning to preschool children by implementation the following:

- Developing educational posters which can be displayed in the health centres;
- Giving of health education about unintentional poisoning in clinics, paediatric outpatient department and paediatric units;
- Utilising local radio slots to provide health education; and
- Counselling of caregivers with children admitted for unintentional poisoning.

1.16. CONCLUSION

The researcher observed an increase in the numbers of preschool children who were admitted to the paediatric unit of the regional hospital after unintentional poisoning. A starting point to investigate this challenge is to explore and describe the caregivers' safety practices regarding unintentional poisoning.

In this chapter, an overview, as well as the relevance of the study, was provided. The problem statement, aim of the study, and relevance of the study were highlighted. An outline of the methodology, population, sampling, data collection and data analysis were provided. The applicable ethical considerations were in-depth discussed.

The next chapter 2, provides an in-depth discussion of the methodology as applied in this study.



CHAPTER 2: METHODOLOGY

2.1. INTRODUCTION

Methodology refers to the techniques or methods that researchers use to structure a study to generate information and analyse data relevant to the research question (Polit & Beck 2012:12). The previous chapter provided a brief outline of the study and methods. The ethical considerations were also discussed in full in the previous chapter. (view Chapter 1).

In this chapter, an in-depth discussion of the strategies, techniques and steps used to gather data is provided. The research design, population, sampling, data collection and analysis used to guide the researcher in exploring and describing caregivers' safety practices regarding unintentional poisoning in preschool children are provided.

2.2. AIM

The overall aim of the study was to explore and describe caregivers' safety practices regarding unintentional poisoning in preschool children in the Elias Motsoaledi Sub-district, Limpopo Province.

2.3. RESEARCH METHODS

2.3.1. Qualitative method

A qualitative method is where the investigation of a phenomenon is done in depth in a holistic manner through collection of rich narrative data. by using a flexible and emerging design (Polit & Beck 2012:739 and LoBiondo-Wood and Haber 2010:87). Caring for people and changing behaviour requires and indepth understanding of the concepts (Parahoo 2014 55). In this study, a qualitative method was applied in generating in-depth information from the participants regarding caregivers' safety

practices in unintentional poisoning among preschool children. A qualitative method was appropriate for the study as caregivers with preschool children narrated their safety practices according to their knowledge and practice to provide rich in-depth information (view Chapter 3).

In this study, the above-selected method was emerging, and the researcher made decisions based on the revealed information collected from the participants (view Chapter 1).

2.3.2. Research design

The research design relates directly to the approach used for answering a research question (Bless, Higson-Smith & Sithole 2014:130). The term research design implies a plan that describes how, when and where data are collected and analysed (Polit & Beck 2012:58). The design was used to answer the following research question:

What are the safety practices of caregivers regarding unintentional poisoning in preschool children in the Elias Motsoaledi Sub-district in the Limpopo Province?

The aim was to explore and describe caregivers' safety practices regarding unintentional poisoning in preschool children in the Elias Motsoaledi Sub-district, Limpopo Province with the specific intention to improve safety practices where necessary (view Chapter 1).

2.3.2.1. Explorative and descriptive design

Polit and Beck (2012:725) indicate that a descriptive research its main aim is to accurately potrait peoples' characteristics or circumstances with which certain phenomena occurs. This research was to explore safety practices of caregivers regarding unintentional poisoning of preschool children in Elias Motsoaledi Sub District. LoBiondo-Wood and Haber (2014:96) state that, exploratory, descriptive and contextual design allows the researcher to make ongoing decisions by reflecting on



what has already been learnt. In this study the researcher had a concern regarding unintentional poisoning of preschool children in Elias Motsoaledi Sub District Limpopo Province.

According to Bless et al. (2014:60) a descriptive and exploratory design focuses on a phenomenon about which minimal is known. The researcher has no knowledge of the safety practices of caregivers in Elias Motsoaledi sub-district regarding unintentional poisoning of preschool children in Limpopo province, for this reason an insight is needed regarding safety practices of the caregivers.

A descriptive research presents a picture of specific details of a situation, social setting, or a relationship (de Vos et al. (2011:96), while an exploratory design is used to gain insight into a situation or phenomenon (de Vos et al. (2011:95). In this study, the researcher presented descriptive information about the phenomenon under study in the setting as described in (view Chapter 1) also (view Section 1.11.2) and Chapter 3).

This study was explorative and descriptive as the researcher explored and described caregivers' safety practices regarding unintentional poisoning amongst preschool children in Elias Motsoaledi Sub-district Limpopo Province as limited was known about the safety practices to prevent unintentional poisoning in preschool children. Specific details were described regarding indoor and outdoor safety practices (view Chapter 3). The researcher also attempted to draw and describe the relationship between the demographic picture of the participants and the prevalence of unintentional poisoning (view Table 2.1).

There was no previous research done nor information found regarding caregivers' safety practices in this sub-district. The researcher observed an increase in the numbers of children hospitalised after unintentional poisoning, thus sought to generate information about caregivers' safety practices in their home environment. The use of the explorative design in this study enabled the researcher to explore, gain insight and understanding about caregivers' safety practices regarding unintentional poisoning amongst preschool children.



In this study, in-depth information was generated using probing questions were asked regarding caregivers' safety practices about unintentional poisoning of preschool children.

2.3.2.2. Contextual design

The location of the focus group has to meet the needs of the group and the researcher (de Vos et al. 2011:371). Naturalistic settings are ones that people live in every day, the qualitative researcher goes wherever the participants are homes, hospital and out patient department etc LoBiondo-Wood and Haber (2010:87).

The researcher wanted to understand the phenomenon as it occurred in the context. This study was conducted in four primary health care Clinics in Elias Motsoaledi Sub-district in Limpopo Province. This was used as the contextual area where the caregivers receive their health care services. The researcher used the area because it was the caregivers' familiar spot and formed part of their lives. In-depth information can be easily be generated if the context in which the phenomenon takes place was considered (view Chapter 3).

In this settings variety of services are provided including primary health care services for mother and child, chronic illnesses, minor ailments, emergency care services The researcher aimed to understand the phenomenon as it occurred in the context. (view figure 2.1).

2.3.3. Population and sampling

2.3.3.1. Population

Population is defined by LoBiondo and Wood (2008:288), as a set that has specific properties and composes of people, objects or events. Polit and Beck (2012:719) define accessible population as people who are available for a particular study. Grove, Burns



and Gray (2013:351) indicated that accessible population are cases that conform to certain criteria. This population criteria establishes the target population (LoBiondo-Wood & Haber 2008:289). Polit and Beck (2012:744) describe target population as the entire population in which the researcher is interested and will like to generalize the study results.

In this study, the target and accessible population were caregivers of preschool children residing in Elias Motsoaledi Sub-district and receiving their health-care services in the four primary health care centres in Limpopo Province. Figure:2.1 provides a map of Elias Motsoaledi to display the site where the study took place. The circle indicates villages where population resides and where some are recruited for this study's data collection.

The researcher is familiar with the cultures of the communities, residing in Elias Motsoaledi sub district in Limpopo Province. Mostly families are a bigger size as a result of extended families. Preschool children mostly are cared by parents, neighbours and grand parents as observed during admissions in the hospital as the results of unintentional poisoning. Some children uses creches while some child rearing is done at home.

The Elias Motsoaledi Sub-district villages where the population was selected is highlighted. The caregivers from the sub-district utilised one of the following clinics and villages:

- Philadelphia Mobile 1(Mpheleng /Sondag fontein).
- Philadelphia Mobile 2 (Homeland and Stompo).
- Elansdoring Clinic (Elandsdoorn villages and surrounding villages).
- Gateway Clinic (Dennilton holdings and Moteti villages).

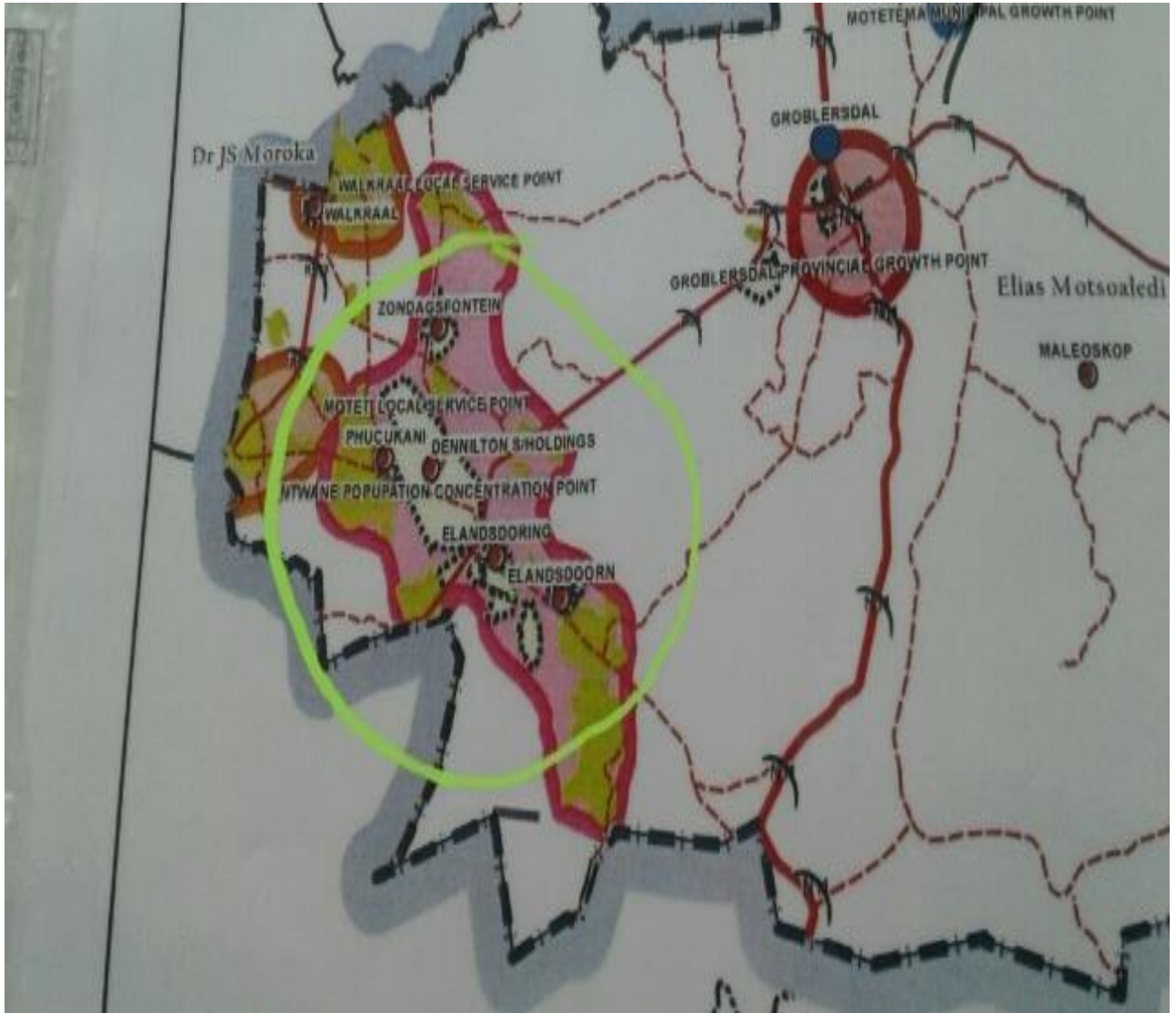


Figure 2.1: Map of the Elias Motsoaledi Sub-district in Limpopo Province.

2.3.3.2. Sampling

A sample is a subset of the population comprising of those selected to participate in data collection (Polit & Beck 2012:742). LoBiondo-Wood and Haber (2010:221) describe sampling as a process of selecting representative units of a population for a study or a research investigation. The term participants was used in the study to describe the sample which the researcher used to collect data and to answer the research question (LoBiondo-Wood & Haber 2014:100; Polit & Beck 2012:275). In this



study, the sample was caregivers of preschool children in the Elias Motsoaledi Sub-district in Limpopo Province.

The inclusion or eligibility criteria specifies the population characteristics (Polit & Beck 2012:274). In this study, the inclusion or eligibility criteria were identified as follows:

- Full and part-time caregivers of preschool children younger than six years of age;
- Caregivers who visited the above-mentioned clinics as they are accessible to the researcher;
- Caregivers who spoke Zulu, Sotho or English as those were the three languages the researcher understood and could be used for generating rich data;
- Caregivers who were 18 years or older; and
- Caregivers who agreed to participate voluntarily in the focus group interviews.

The exclusion criteria is a sampling criterion that specifies the characteristics which a sample does not have (Polit & Beck 2012:727). In this study, the exclusion criteria were as follows:

All caregivers who did not meet the above inclusion criteria.

The researcher chose participants based on a specific criterion (view Chapter 1 and Chapter 2) (Bless, Higson-Smith & Sithole 2014:177), with the purpose to obtain information about caregivers' safety practices regarding unintentional poisoning in preschool children at the Elias Motsoaledi Sub-district in Limpopo Province.

During purposive sampling, participants are selected who are likely to most benefit the study (Grove, Burns & Gray 2013:365). Polit and Beck (2012:739) describe purposive sampling as non probability method in which the researcher selects participants who will be most formative.



The approach in using purposive sampling was that selected, and invited caregivers could represent the population of caregivers in the particular area. Purposive sampling was, therefore, utilised to select the participants where they were accessible at Gateway, Elandsdoring, Philadelphia mobile1 clinic which is situated in Mpheleng and Sondagfontein and Philadelphia mobile two in Homeland. This method of data collection included caregivers of preschool children from other nearby villages who receive health care services at the mentioned clinics as seen in the map of Elias Motsoaledi Sub-district in Limpopo Province. The researcher selected caregivers of preschool children to explore safety practices regarding unintentional poisoning of preschool children with the knowledge that they will be informative and indepth information will be generated.

In qualitative research, there is no fixed rule for the size of a sample. The sample size is based on information needed, and the guiding principle in this sampling is data saturation (Polit & Beck 2012:521; LoBiondo-Wood & Haber 2010:236). In this study, the sample size was 59 participants who were selected and invited to participate. Two participants were excluded from the initial group of voluntary participants. The reason for exclusion was that they had children who were above six years which was discovered during demographic data analysis. The population thus remained at 57 participants (view Table 2.1).

2.3.4. Gaining access

Gaining entrance is when a researcher negotiates to have access to those sites that are deemed suitable for the inquiry through the cooperation of key gatekeepers in the selected sites (Polit & Beck 2012:729). In this study, the researcher gained access from the gatekeepers by applying for permission from the University of Pretoria's Faculty of Health Sciences Research Ethics Committee, Department of Health Research Committee of the Limpopo Province, Primary Health Care Clinics selected for the study (view Annexures E, F and G).



The researcher explained, in the application letters, the purpose, aim and benefits and duration of the study. Emphasis was also placed on the acknowledgement and application of ethical guidelines and ethical principles during this study. The researcher also confirmed that the study would be conducted with minimum disruption of health services during the recruitment of participants and the conducting of focus group interviews, based on the view of Polit and Beck (2012:184). The researcher was familiar with the sites and knew the cultures and languages spoken in the community; which are Zulu and Sepedi. Many of the inhabitants can also speak English as an additional language. This detail enhanced trustworthiness during data generation. In this study, progressive entry occurred as the study was conducted in four different settings and continued until data saturation has been achieved (view Chapter 1).

2.3.5. Recruitment

Recruitment is when a researcher recruits participants for participation in a study once the sampling is specified (Polit & Beck 2012:286). Stevenson and Waite (2011:1203) define recruitment as an action to enlist people. The researcher gained entrance by receiving an approval letter from operational managers in charge of the four aforementioned clinics where the study was conducted (view Annexure G). In this study, the researcher used a face to face recruitment method in the four selected sites (view Figure 2.2). The participants were grouped according to the accessible criteria, and the study was verbally explained to them all (view Annexure C). Five(5) to twelve(12) participants who voluntarily agreed to participate in the study were invited to become part of a focus group (view Table 2.1).

The researcher decided to target Wednesdays as the best day for data collection as it was immunisation clinic day for children and attendance to the clinic usually is higher than other clinic days. Data collection also coincided with the measles immunisation programme resulting in an increased number of preschool children and caregivers attending the clinics. The participants who showed interest in participation were given information leaflets (view Annexure C). Some of the participants could read the



information leaflet, and for those participants who were unable to read English, the researcher verbally explained the aim and objectives of the study in Zulu and Sepedi. All participants were requested to sign a voluntary consent form to participate (view Annexure C). The researcher recruited participants who formed a focus group of five(5) to twelve(12) from each site, to explore and describe the safety practices of caregivers regarding unintentional poisoning of preschool children (view Table 2.1).

2.4. DATA COLLECTION

Data is the information generated by researchers during a study to address a research problem (Polit & Beck 2012:725). In qualitative studies, data collection is more natural and fluent as decisions about what to be collected evolve during data generation where the researcher uses open-ended questions to gather and digest information (LoBiondo-Wood & Haber 2014:101; Polit & Beck 2012:532). Data was collected by conducting eight focus group interviews to address the research question of what were the safety practices of caregivers regarding unintentional poisoning in preschool children in the Elias Motsoaledi Sub-district Limpopo Province.

Three languages were chosen in data collection, namely English, Sepedi and Zulu at Elandsdoring, Gateway and Mobile clinics. Both indigenous languages were used as some participants spoke Zulu, while the majority spoke Sepedi. Some participants were bilingual or trilingual, and English was chosen in some cases as a language of preference for data generation. Participants were included in language groups of their choice where they could communicate with ease and understanding. This contributed to the trustworthiness of the data.

2.5.1. Focus group

Using focus groups is a research technique utilised to collect data through group interaction in a non-threatening environment (de Vos et al. 2011:361). It is the view of Polit and Beck (2012:537) that focus groups are assembled by including five or more participants to answer questions which relate to a given topic. The focus group of



participants were selected according to explicitly stated criteria as stated by Bless, Higson-Smith and Sithole (2014:200).

In this study, focus groups included were caregivers of preschool children who spoke Zulu, Sepedi or English as a preference. The researcher conducted eight focus groups of between five (5) to twelve (12) participants. Two groups each site were interviewed to gain more in-depth and rich information about the caregivers' safety practices regarding unintentional poisoning among preschool children. Suggested time frame by Burns and Grove (2009:514) was 45-90 minutes. In this study the average time for interviews were also between 45-90 minutes including the time the caregivers required to complete their demographic information (view Annexure A and B). Some of the participants required assistance and clarification for completing the demographic information (view Annexure A).

A fieldworker was used to take field notes and document information when the participants talked simultaneously, mumbled or used nonverbal expressions (view Chapter 3). Participants were recorded using audio records.

The following table provides a summary of the focus groups, language used and a number of groups per data collection.

Table 2.1: Settings where focus group interviews were conducted, the number of participants per group and dates.

Name of the settings	Villages	Languages	Number of participants	Interviews
Gateway Clinic.	Moteti, Kirkvorsfontein A and B Slovo, Homeland, Lusaka, Taereng, Vukuzenzele, Five and Ten Morgan.	Sepedi	6 per group.	08/02/2017.
		Zulu	8 per group.	08/02/2017.
		Total: 14		
Elandsdoring clinic.	Phooko, Elandsdoorn A & B, Marapong, Malaening.	Sepedi	6 per group.	14/11/2016.
		Sepedi, Zulu and English	12 per group.	16/11/2016.
		Total: 18		
Philadelphia Mobile one (Mpheleng).	Sondagfontein, Mpheleng, and GaMatlala.	Sepedi and English.	6 per group.	23/11/2016
		Sepedi and English.	6 per group.	
		Total: 12		
Philadelphia Mobile clinic (Homeland)	Homeland.	Sepedi	8 per group.	23/11/2016.
		Zulu	5 per group.	17/02/2017.
		Total: 13		
Total	Four clinics	Sixteen villages.	Sepedi and English.	57 participants in eight groups.

2.5.1.1. Advantages of a focus group

Polit and Beck (2012:538) are of the opinion that during focus groups, the researcher will be able to obtain view points and valuable data of more than one participants in a relaxed manner during a brief period. Focus groups capitalise on the reaction of participants to what was said by other group members in the focus group without fear of criticism, resulting in the generation of in-depth information (Polit & Beck 2012:538, Bless, Higson-Smith & Sithole (2014:200).

In this study, the one advantage of the focus group was that participants were interviewed in their language that made them feel at ease. They were also interviewed in a familiar environment with people they were familiar with. The participants also shared a similar group culture as they were all caregivers of preschool children.



Further advantage was the feeling of security experienced by the participants to reveal their practices, not being ashamed of what they were practising as other participants revealed the same practice (view Chapter 3). The researcher used numbers to enhance the freedom to participate. Participants were encouraged to put the number on an arm, forehead or shoulder where it would be visible. Thus this activity inspired openness and participation during the focus group interviews. Honesty in answering the questions expressed by one participant lead other participants to being honest and free to say what they practice at home (view Chapter 3). A careful record of the debate between participants give the researcher much deeper insight into the topic as stated by Bless, Higson-Smith & Sithole (2014:200)

2.5.1.2. Disadvantages of focus groups

The following are regarded as disadvantages of focus groups. This section identified some of the disadvantages and highlighted the measures the researcher took to overcome these challenges during the focus groups interviews.

The dynamics of a focus group session may foster a group culture that could inhibit individual participants' expression of information, as "group think" takes control where participants feel uncomfortable to be in front of the group (Polit & Beck 2012:538). Bless, Higson-Smith and Sithole (2014:201) indicate that participants may find it extremely difficult to express their thoughts they would need encouraging. During the focus group interviews, some of the participants were shy or quiet, but the researcher used her interviewing skills to include them in the discussions (view Annexure B).

Data from focus groups are sometimes questioned for their true-to-life reflection as compared to individual interviews (Polit & Beck 2012:538). Further data collection method can be moulded or bent in order to get close to people's perception (Parahoo 2014:59). In this study probing, listening skills, paraphrasing and clarification were used to explore and describe caregivers' practices regarding unintentional poisoning among preschool children (view Annexure B). By using these interviewing skills, the



researcher ensured that the data collected were true and rich in information (view Annexure B).

Focus group interviews are often challenging to transcribe due to technical challenges as participants speak simultaneously and in different tones and levels of volume (Polit & Beck 2012:575). In this study, the researcher also experienced a challenge in transcribing the data as some participants had the same tone of voice as others or did not speak at all. The researcher used, during transcription, the numbers allocated during the icebreaker session and field notes to identify the participants. The researcher found it easier to indicate, in the field notes, the number (participants) who spoke simultaneously or was soft in their response. This approach made it easier to link the participants to the comments made during transcribing.

The view of Polit and Beck (2012:538) that focus group participants take advantage and react to what is being said by other participants, sensitised the researcher to such behaviour and made all participants be part of the discussions (view Chapter 3, Annexure). The researcher realised that in this study, the disadvantage of focus group interviews could very easily develop. She realised that participants adhered to a group culture where they answered, repeating what other participants had said. For example the response. *"me too"* ... and not expressing what they really practice. The researcher used probing questions and paraphrasing to explore the given answers (view Annexure B).

Participants sometimes give answers based on the views of other participants, and when probing questions were asked, they changed their statements. The researcher was alert to this occurrence and carefully observed the participants while writing observational notes (view Annexure K). Sometimes one participants would dominate a group, and other participants would be afraid to respond. The researcher used her interviewing skills to ensure that this occurrence did not influence the information explored. This is supported by Bless, Higson-Smith and Sithole (2014:201) that the success of the focus group interview depends on the skills of the researcher.



2.5.2. The instrument for collecting data

In this study a demographic information guide and focus group interview guideline was developed and utilized to collect data.

Demographic information guide was also developed for the participants. It contained five questions as stated in (view Annexure A). Participants filled the demographic information guide (view Annexure A). The guide was used to explore demographic relationships of caregivers' safety practices regarding unintentional poisoning amongst preschool children of Elias Motsoaledi Sub-district in Limpopo Province (view Chapter 3).

The primary method of collecting qualitative data in this study was by interviewing participants in focus groups as well as supportive field notes (Polit & Beck 2012:532). In this study, focus group interviews were generated to be effective to explore and describe caregivers' safety practices regarding unintentional poisoning in preschool children. An interview guideline, with the main question and suggested probing questions, were used to generate the data (view Annexure B).

Pre-testing is the trial administration of a newly developed instrument to identify problems or assess time requirements (Polit & Beck 2012:738). In the current study, the researcher tested the newly developed demographic and interview guideline two months before the primary study. The instrument was pretested by using caregivers with preschool children visiting the outpatient paediatric department in one of the hospitals in Elias Motsoaledi Sub-district in Limpopo Province.

The researcher conducted interviews with eight participants; two in each group to test the instrument. The findings were that the demographic information was easily filled in and required minor changes in the tick list section to enhance understanding (view Annexure A). The focus group interview guide was pretested, the conclusion was that the main question and probing questions were adequate to generate in-depth



information. The findings from the pilot study were not used in the primary study (view Chapter 3).

2.5.3. Preparing for the interview

Careful planning regarding the environment, questions to be asked and recruiting participants are the secrets in conducting an effective focus group interview (Polit & Beck 2012:541 & de Vos et al. 2010:303). The location of the focus group should meet the needs of the group and the researcher (de Vos et al. 2011:371). In the current study, the researcher requested a room at each site which had minimal noise for audio-recording purposes. Furniture was arranged with enough chairs in a circle to enhance the conversation. Participants were interviewed on the day they visited the clinics.

The researcher acted as the investigator and used a trained fieldworker for taking field notes and documented when the participants talked simultaneously or mumbled and used nonverbal expressions. The audio recording was utilised, and participants were informed of the intention to use it. Notebook, memo for writing field notes, also demographic guide formats, informed consent forms, pens and stickers which were use for formality as it replace using of names.

The researcher provided the childrens'childminder with lollipops in the presence of their caregivers to minimise interruptions during interviews it was verbally consented by caregivers (view Annexure C). Some other children who were infants and toddlers were on their caregivers' laps as they fear separation. They did not influence the process of data generation as some were being breastfed, sleeping and others were sucking lollipops.



Figure 2.2. Schematic presentation of the group set up.

According to Polit and Beck (2012:538), the location should be comfortably amenable for audio recording. The set up was presented using photographs taken in one of the settings (Picture1).The circle sitting position promoted comfort. The room set-up was specific for the interviewing purposes.

2.5.4. Conducting the Interview

At Gateway Clinic and one mobile clinic, the population was predominantly Zulu speaking, and the researcher accommodated a homogenous language preference for the trustworthiness of the data collected. The same approach was followed in Elansdoring and one mobile clinic where the dominant language is Sepedi. English was used when participants indicated it was their preferred language.

Suggestions of Polit and Beck (2012:542) on how to conduct a focus group interview were followed. In this study, the researcher started by greeting the participants and letting everyone introduce themselves as an icebreaker. Pertinent information about the study was shared. The investigator explained that there was an increasing number of children admitted with different types of poisoning in the hospital so this led to the interest in conducting the study about safety practices of caregivers regarding



unintentional poisoning amongst preschool children in Elias Motsoaledi Sub-district in Limpopo Province.

The researcher ensured that the participants understood the concepts of poisoning, safety practices and a preschool child. Informed consent forms were given to each participant to sign. It was those who were eligible to partake in the study. Those who did not understand English received an explanation in Zulu and Sepedi and were assisted to sign the informed consent forms. They were also given the demographic guide to fill, and others who were uncertain were assisted. This did not influence the interviews, but the researcher observed that the participants were more comfortable and open. Interviews were conducted in English as a preference, Zulu and Sepedi which are the most spoken languages in Elias Motsoaledi Sub-district in Limpopo Province.

The interviews were conducted in areas where the participants were familiar with and knew the different faces of health care workers in their respective clinics except the investigator, field worker and childminder. This also helped to enhance the effectiveness of the interviews.

2.5.5. Obtaining the caregivers' demographic profile

The caregivers were requested to fill the demographic information guide, which took approximately five minutes. Demographic characteristics such as the relationship of the caregiver to the preschool child, level of education of the caregiver, information pertaining the number of preschool children in the household, ages of preschool children in the household, gender of the preschool children in the household and if the child had ever been admitted to hospital for poisoning were posed. In the process of filling the demographic information, the investigator explained the format in different languages to help those who could not read or write in English. Additionally, the field worker assisted those who had challenges in filling the form such as where to tick. For instance, there were two caregivers who were illiterate and needed assistance.



2.5.6. Interview phase

The interview is a method of data collection in which an interviewer asks questions to participants face to face (Polit & Beck 2012:730). Stevenson and Waite (2011:744) define interview as a conversation between two or more people.

The researcher ensured that the audio recorder was in working order, testing the sounds by recording various words to check if it produced clear sounds that would not hinder the transcriptions. The researcher shared the interview phase with two trained fieldworkers who are professional nurses in psychiatry, and the other one in child nursing. Each fieldworker worked with the researcher in two different settings.

Polit and Beck (2012:538) reveal that a good strategy for question sequence is to move from general to specific. The researcher started with the central question namely:

“What are you doing at home to make sure that your small child(ren) will not eat or drink anything that is harmful?”

Qualitative research allows questioning and probing for clarification of contradiction and inconsistency in response (Parahoo 2014 :72). After giving the participants the opportunity to answer the central question, it was followed by probing questions namely “How are you storing medication? (view Annexure B).

During the study in data collection, some of the participants were replying out of context. The researcher then had to rephrase the question in their language for better understanding. A close rapport with participants was developed, and detailed and honest information was accessed as participants revealed their safety practices at their homes regarding unintentional poisoning among preschool children.



2.5.7. Using of an audio recorder

The audio recorder was used to record interviews verbatim (word by word). At the beginning of the interviews, the researcher opened the audio recorder as agreed upon by the participants. The audio records were labelled automatically during recording using the date, time and duration to prevent being mixed with other recordings. The researcher further renamed them according to the groups and clinics where they were recorded.

2.5.8. Listening skills

Stevenson and Waite (2011:831) define listening as an effort to hear something or listen to a conversation or paying attention. Participants were allowed to speak their minds supported by listening attentively by the researcher and the two trained field workers. The researcher and the field workers listened intently to the participants' narratives. The researcher strived for closure by ending the interview by requesting the participants to ask anything they wanted to know with regard to the study. Groups were briefed about correct safety practices after the interview which was not included in the study and addressed any questions they posed, such as what do in an emergency when a preschool child is unintentionally poisoned.

2.5.9. Clarification and paraphrasing

Stevenson and Waite (2011:264) define clarification as making something easy to understand. The researcher sought clarification from participants where the statements were not clear or incomplete, probing further to find the real answer as stated in the focus group guideline (see Annexure A and Annexure B).

Stevenson and Waite (2011:1040) define paraphrasing as expressing the meaning or a passage using different words especially to achieve greater clarity. The researcher paraphrased some of the participants' statements to come into agreement that the



way they were interpreted was the way they were meant to be denoted (view Annexure K).

2.5.10. Field notes

Field notes are broader and more analytic and more interpretive than a simple listing of occurrences (Polit & Beck 2012:548). They represent the participants observer's efforts to record information and to synthesise and understand the data (Polit & Beck 2012:548). Polit and Beck (2012:548) are of the opinion that the field workers need to discipline themselves to provide details. A description of what has transpired must include enough contextual information about time, place and actors to portray the situation adequately.

The field worker wrote down descriptive field notes that contained a narrative account of what was happening in the field events, conversations, dialogue and contexts were recorded objectively (Polit & Beck 2012:548). In this study, the fieldworkers wrote descriptive notes of what transpired; some words such as *hmm....*, body posture and nonverbal gestures of the respondents such as a pause, laughter as seen in the data transcriptions and also the audio recording of non-verbal sounds.

Polit and Beck (2012:554) describe observation notes as detailed objective accounts of what transpired during data collection. The researcher and the fieldworkers during focus groups interviews observed the reactions of different groups and the way they answered the questions. This were written down as observational notes such as that the environment in the room was relaxed and comfortable. Some of the participants in this current study demonstrated shyness, laughter, smiles, boldness, silence, nodding, speaking with hands and also showing off.

Polit and Beck (2012:549) state that methodological notes are reflections about observational strategies. The notes help the researcher to follow the method approach that has been selected. Some of the participants speak at the same time, and others



become silent. The researcher ensured that all participants took part in the interview by them giving each one a chance to speak.

Personal notes are comments about the researcher's feelings on the field (Polit & Beck 2012:549). In this study, the researcher remained as objective as possible. The researcher evaluated the atmosphere in different settings. Other groups felt comfortable to speak freely without being shy at the beginning of data collection while others were bold and helped them to open up and share what they practiced in view of unintentional poisoning. Personal notes were made by the researcher as a deliberate attempt to remain sensitive to own biases.

2.5.11. Post interview procedures

Data saturation is sampling to the point where no new information is obtained, and redundancy is achieved (Polit & Beck 2012:275). In this study, data saturation was achieved when no new information was found and where all groups were repeating the same information. The eighth focus group interview was used to confirm data saturation.

Polit and Beck (2012:543) suggest that audio-recorded information is listened to, to check for audibility and completeness soon after the interview. In this study, the audio recorded information was listened and was found audible enough for perfect transcribing.

The participants were invited to have more refreshments before going home as stipulated in the informed consent (view Annexature C). All participants who voluntarily participated did not withdraw during the data collection, except for two who did not fit the criteria. Gratitude was shown to the participants for voluntarily participating. The researcher and the field workers wrote reflective notes immediately after the participants had left to capture any ideas that might be of relevance.



2.6. DATA MANAGEMENT AND ANALYSIS

Qualitative analysis is a process of fitting data together, of making the invisible obvious, and of linking and attributing consequences to antecedents (Polit & Beck 2012:557). Qualitative data analysis is subjective, and it starts with data collection (Polit & Beck 2012:556). Data analysis is an active and interactive process (Polit & Beck 2012:557). The purpose of data analysis was to organise, provide structure and elicit meaning from the collected data (Polit & Beck 2012:556; LoBiondo-Wood & Haber 2014:114).

The demographic information was analysed to understand the age, level of education and any exposure of preschool children to poisoning (see the demographic status in Chapter 3).

2.6.1. The process of data analysis

Content analysis was conducted in this study to identify prominent themes and patterns among the themes as stated in Polit and Beck (2012:564). The group level data was analysed by scrutinising themes, interactions and sequences within and between groups (Polit & Beck 2012:576). In this study, the process of data analysis started during data collection. The following steps were followed during analysis:

- **Step1: Transcribing qualitative data**

Transcribing is to convert recorded data into words by writing what is recorded as it is in a hardcopy, word for word, not changing anything. Polit and Beck (2012:557) state that researchers need to ensure that transcriptions are accurate and that they validly reflect the interview experience. Polit and Beck (2012:557) are of the opinion that transcription quality is especially important in focus group interviews as emotional content and words must be honestly recorded as participants are responding not only to the questions being posed but also to the experience of being in a group (Polit & Beck 2012:558). In this study, data were transcribed in sequence and verbatim; word



for word, pauses, laughter, nonverbal cues, and body posture were all recorded. (view Annexure K). In this study, the researcher made backup copies of the recorded data and locked them in a safe place known only to the researcher.

The researcher transcribed the data from the audio recording by listening to them repeatedly to ensure that what was said by the participants was written as is (view Annexure K). In this study, field notes ideally were integrated to yield a comprehensive transcript analysis as stated in Polit and Beck (2012:575) (view Annexure K). In the transcriptions' sheets, the researcher used symbols to indicate who was speaking, for example participant (P1), and participant (P2) and for the interviewer the word investigator was used. The researcher transcribed the recorded data word for word. (view Annexure K).

Transcription rigour is enhanced by keeping a log of decision points while transcribing; what the transcriber has chosen not to transcribe (Polit & Beck 2012:558). In this study, the researcher excluded information from participants that was out of the context.

- **Step 2: Reading of all verbatim transcripts repeatedly**

The researcher used content analysis. After transcription, the researcher read transcripts repeatedly to get ideas and reflections. These were written down. The researcher re-listened to all audio recordings of the focus group interviews repeatedly. After re-listening to the audio to be familiar with the content, the researcher read the transcription to search for in-depth information.

The researcher continued to read the transcribed information from the eight focus group interviews to get some ideas or sense of the information. The researcher highlighted quotes from the transcribed verbatim data from all groups. The researcher also scribbled some thoughts and observations on the notebook margin to get an insight of what was transpiring. The process was repeated with all the verbatim

transcribed data. Quotes were used to support findings followed by literature control.(view Chapter 3).

- **Step.3: Coding of qualitative data**

Analysis can be conducted by assessing similarities and differences between groups, determining coding frequencies to aid pattern detection, examining codes about participants' characteristics and examining how much dialogue individual members contributed (Polit & Beck 2012:575). In this study,the coding of data was done using different colours for various quotes.

The following colours used:

- **Purple** colour was use for unsafe storage containers.
- **Brown** within easy reach.
- **Light sky-blue** trusting, grey lack of knowledge.
- **Dark blue** knowledge.
- **Yellow** not practising safety.
- **Green** safety practices.
- **Red** for exposing children
- **Light purple** acknowledgement
- **Light green** out of reach but withouth locking.

Quotes were also clustered together as groups meaningthe same thing. (view Annexure L).

- **Step.4: Developing themes and sub-themes**

Raw data is analysed by identifying and bringing together components or fragments of ideas or experiences where they are pieced together so that themes of behaviour are formulated that are congruent to the population being studied (Polit & Beck 2012:562). A theme is an abstract entity that brings meaning and identity to a current experience and its variant manifestation, it captures and unifies the nature or basis of experience into a meaningful whole (Polit & Beck 2012:562). According to Polit and



Beck (2012:558), qualitative analysts develop categories or themes based on scrutiny of actual data by breaking it into segments. The researcher can develop themes by identifying similar content, symbols and meaning (Polit & Beck 2012:562). In this study, a descriptive, exploratory and contextual study about caregiver's safety practices regarding unintentional poisoning by preschool children generated themes and sub-themes based on the available data.

- **Step 5: Integration of the data**

Content pieces are weaved together into an integrated whole (Polit & Beck 2012:564). Various themes need to be interrelated to provide an overall structure of integrated description to the data (Polit & Beck 2012:564). In this study, the themes were integrated to form three themes and sub-themes emerging from the main themes.

- **Step 6 Reporting of findings**

Polit and Beck (2012:728) define findings as the results of the analysis of a research data. In this study, findings of caregivers' safety practices regarding unintentional poisoning amongst preschool children in Elias Motsoaledi Sub-district in Limpopo Province were reported. These findings were supported by literature control (view Chapter 3).

2.7. STRATEGIES TO ENSURE TRUSTWORTHINESS

Trustworthiness was discuss in depth in this chapter. Trustworthiness is defined by Polit and Beck (2012:745) as the degree of confidence qualitative researchers have in their data assessments. In this current study, the researcher participated effectively and concentrated on every activity that happens in the settings during the focus group interviews. Lincoln and Guba's (1985) (cited in Polit & Beck 2012:745) indicated five criteria framework to be applied to ensure trustworthiness. These are credibility, transferability, dependability, confirmability, and authenticity



2.7.1. Credibility

It refers to confidence in the truth of the data and interpretations and is viewed by Lincoln and Guba (1985) (cited in Polit & Beck 2012:585). as the overriding goal of qualitative research. Bless, Higson-Smith and Sithole (2014:236) emphasise that as a researcher, one needs to strive to establish confidence in the truth of the findings of the context in research. In this study, believability was enhanced through prolonged engagement, persistent observation and source triangulation as discussed below.

2.7.1.1. Prolonged engagement

Prolonged engagement is when a researcher invests sufficient time in data collection activities to have in-depth understanding of the culture, language, or views of the group under study to test misinformation (Polit & Beck 2012:739).

The prolonged engagement was enhanced in this study by the researcher who understood the context under study very well. The researcher invested sufficient time in collecting data to have in-depth understanding of the participants under study regarding caregiver's safety practices about unintentional poisoning of preschool children. In each interview site, the researcher invested the entire day to collect data and analyse it. Further analysis of the data was done before visiting another setting for focus group interviews.

The researcher rephrased some of the questions to avoid misunderstandings by participants (view Annexure B). The researcher created a perfect interrelationship with diverse groups in different settings during the period of data collection. Participants were addressed in their language; Zulu and Sepedi, to build trust and avoid misinformation, or English as their choice language.

They were also given opportunities to ask questions where they did not understand. It was mostly done when filling in the demographic information. Also during answering questions from the guidelines, they were allowed to seek clarification where the need



arose. The prolonged engagement was enhanced during the interview as each group took between 45-90 minutes.

2.7.1.2. Persistent observation

Persistent observation is when the researcher focuses on the aspects of the situation that are relevant to the study (Polit & Beck 2012:737). In this study, the interview was recorded, and field notes were taken to obtain in-depth information. The researcher gave each participants time to express themselves on the safety practices regarding unintentional poisoning among preschool children at Elias Motsoaledi Sub-district in Limpopo Province (view Annexure K).

2.7.1.3. Source triangulation

Triangulation was also utilised to enhance credibility by using multiple sources to conclude the truth (Polit & Beck 2012:590). The researcher interviewed two focus groups in each of the four settings; (eight groups), in order to analyse and interpret findings that define the caregivers' safety practices regarding unintentional poisoning among preschool children of Elias Motsoaledi Sub-district in Limpopo Province (view Annexure K and Table 2.1).

2.7.2. Dependability

Dependability demands that the researcher thoroughly describes and precisely follows a clear and thoughtful research strategy Bless, Higson-Smith & Sithole (2014:237). Dependability refers to the stability of the data over time and conditions (Polit & Beck 2012:585). In this study, dependability was enhanced by the strategies of enhancing credibility. (view Section 2.7.1.4.). In this study, audio recording, field notes, and observation were used to conclude the data gathering and analysis. Data were collected and carefully documented by the researcher and the fieldworkers, from eight focus groups of caregivers with preschool children receiving their health services in



the four clinics. The researcher ensured the stability of the findings where similar repeated information was found in separate focus groups.

2.7.3. Confirmability

Confirmability refers to the objectivity or neutrality for congruence between two or more independent people about data accuracy, relevance or meaning (Polit & Beck 2012:585; Bless, Higson-Smith & Sithole (2014:237). The study was described in details to make it possible for another person to determine confirmability.

2.7.4. Transferability

Transferability is the extent to which findings can be transferred to or have applicability in other settings or groups (Polit & Beck 2012:585; Bless, Higson-Smith and Sithole (2014:237). Transferability was not the purpose of this study, but the researcher provided sufficient descriptive data so that consumers could evaluate the applicability of the data to other contexts. The researcher will allow the preliminary findings to also be reviewed by another discipline internationally through writing an article.

In this current study, the researcher only intended to explore the safety practices of caregivers regarding unintentional poisoning amongst preschool children in Elias Motsoaledi Sub-district in Limpopo Province. The findings were not intended to be generalised to other sub- districts or provinces as the safety practices of caregivers regarding unintentional poisoning amongst preschool children may not be the same.

2.7.5. Authenticity

Authenticity refers to the extent to which researchers fairly and faithfully show a range of realities (Polit & Beck 2012:585). The researcher would make the evidence available on request to confirm authenticity. Reflexivity strategies the researcher used were to probe deeply to grasp the experience, process or culture understudy through the lens of the participants. The researcher in this current study reveals the participants'



feelings, moods, and the language they use through the audio recordings, field notes and verbatim transcribed notes. The findings reflected what transpired in this study. Readers of this study will be able to understand what was being portrayed in caregivers' safety practices regarding unintentional poisoning among preschool children of Elias Motsoaledi Sub-district in Limpopo Province.

Ethical consideration were discuss in-depth in chapter one (view Chapter 1).

2.8. CONCLUSION

In this chapter, the methodology and research design were discussed. The method of data collection, and data analysis were explained. Strategies to maintain trustworthiness were explained. The next chapter outlines and discusses the findings and literature control of the collected data.



CHAPTER 3: FINDINGS AND LITERATURE CONTROL

3.1. INTRODUCTION

In Chapter two, the methodology was explained, and the research design was discussed as applied to this study. Chapter three presents the findings in terms of meeting the research aim, answering the research question. Literature control are discussed base on eight focus group interviews (view Annexure B). The literature aims to provide evidence and provide reasons for the findings in this study. The literature used to clarify the findings is from national and international publications.

The overall aim of the study was to explore and describe caregiver safety practices regarding unintentional poisoning in preschool children at the Elias Motsoaledi Sub-district, Limpopo Province.

The following research question was posed to ensure a clear focus on collecting correct and trustworthy data:

What are the safety practices of caregivers regarding unintentional poisoning in preschool children in the Elias Motsoaledi Sub-district, Limpopo Province?

The results of the findings were coded, clustered to form themes and sub-themes. (view Chapter 2 and Annexure L). The findings are supported by quotations identified from the data of the focus group interviews and a discussion with supporting literature.

3.2. DEMOGRAPHIC DATA

The following table presents the four primary health care community centres where data was collected (view Chapter 2 Table 3.1).

Table 3.1: Sources of data collection

Primary health care centre	Number of focus group interviews
Elandsdoorn clinic	2
Philadelphia mobile (1)	2
Gateway Clinic	2
Philadelphia mobile (2)	2

The construction of the focus groups was in line with the view of Polit and Beck (2012:537) who state that a focus group should consist of five (5) to twelve (12) people. The participants were all caregivers looking after preschool children and meeting the eligible criteria (view Chapter 2). Each participant in every focus group was asked to complete a demographic information questionnaire before the focus group interviews were held.

3.2.1. Demographic information of participants

The demographic information was collected from eight focus group. It was included to display factors that might influence the caregivers' safety practices regarding unintentional poisoning of preschool children, such as the relationship of the caregiver to the preschool child, the level of education of the caregiver, the age and gender of the preschool child in the household as well as knowledge if the preschool child had unintentionally ingested any poisonous substance (view Annexure A). The format of the questions in the questionnaire was of a tick-off √ (yes) or X (no). Fifty-seven participants (N=57) completed questionnaires to capture demographic information. From the questionnaires the demographic information is summarised in Table 3.2:

Table 3.2. Demographic information

Section A: Demographic information				
1	Relationship of the caregiver with the preschool child (N=57 caregivers)			
	Parents	n=42	74%	
	Grandparents	n=10	17%	
	Siblings	n=1	1.7%	
	Neighbour	n=0	0%	
	Other, namely (3 X Aunt and 1 x Cousin	n=4	7%	
2	Level of education of the caregiver (N=57 caregivers)			
	Never attended school	n=2	3%	
	Grade 0-Grade 7	n=5	9%	
	Grade 8-Grade 10	n=17	30%	
	Grade 11- 12	n=25	44%	
	Tertiary level	n=8	14%	
3	Information pertaining the number of preschool children in the household			
	How many preschool children are there in the household?	112		
4	Ages of preschool children in the household (N=112 children)			
	Younger than one year of age	21	19%	
	Between 1 and two years	19	17%	
	Between 2 and three years	18	16%	
	Between 3 and four years	12	11%	
	Between 4 and five years	14	12%	
	Between 5 and six years	28	25%	
4	Gender of the preschool children in the household(N=112 children)			
	Male	63	56%	
	Female	49	44%	
5	Has a child from your household ever been admitted to hospital for poisoning ingestion?			
	Yes	7 parents	6%	
	No	105	94%	
	If yes, how many times? Caregivers whose preschool children were poisoned once were N=6 and caregiver whose child was poisoned twice was N=1			



3.2.2. Discussion of demographic information

Predominantly twenty five percent (25%) of the preschool children in the study were between ages five (5) to six (6) with the least (11%) are aged three (3) and four (4) years. The highest number of children in the household was six and the lowest, was one per household. Males are fifty six percent (56%) of children dominating the cohort and forty four percent (44%) were girls. The majority ninety four percentage (94%) of the caregivers reported that their children had never been admitted for unintentional poisoning. Whereas a minor six percent (6%) had children who were hospitalised due to unintentional poisoning from different agents such as plants, paraffin, chillies and diesel. One caregiver revealed that her preschool child was admitted twice as result of unintentional ingestion of plant poison and paraffin. The prevalence of preschool children hospital admissions as a result of unintentional poisoning contradicted with preliminary admission statistics compiled by the researcher a year earlier (January 2014 to March 2015). (view chapter 1 Table 1.1. Section 1.2.).

Seventy four percent (74%) of these caregivers were parents while a small percentage were grandparents (17%), siblings (1.7%) and others such as aunts, cousins (7%). Almost all caregivers in the focus groups are literate and only 3% of the caregivers never attended school. More preschool children in one home could render them more vulnerable to unintentional poisoning.

In this study grandparents, siblings and aunts were found to be caregivers of preschool children which was not reflected in other studies. However in a study conducted by Gibbs et al. (2005:374) the results vary 97% of caregivers were mothers who participated in the study regarding understanding parental motivators and barriers to the uptake of child poisoning safety strategies.

The educational status of caregivers in this focus group showed that almost all were educated, and they could practice safety effectively if they were trained and given information regarding safety practices. The findings of Younesian, Mahfoozpour, Ghaffari Shad, Kariman and Hatamabadi (2016:75) indicated that an increase in



educational status of a mother increases the knowledge level in preventive measures regarding unintentional injuries including poisoning.

Caregivers in different homes in this study had two or more preschool children who were residing with them; this can be a potential risk for effective safety practices regarding unintentional poisoning. The findings are supported by Younesian et al. (2016:75) state that the number of children in the family can influence mother preventive behaviours or safety practices. Hossein (2009:50) who reveals that children from a bigger family are more susceptible to unintentional accidents than children from a smaller family as the caregivers do not have enough time to care for all of them.

The study identified that ages of preschool children in the different households of the focus groups as revealed in the demographic data were mostly five to six years while the lowest number was three to four years. Based on the study by Mohammed, Mohammed and Byoumi (2013:9), it was revealed that more than two-thirds of the studied children were from three to five yrs old and the mean age was one to three years.

In this study, there were more preschool male children than females who were found in different homes of the caregivers. This predominance is also found in the study of Balan and Lingam (2012:35) and Eldosoky (2012:1023) that boys are more often victims of unintentional injuries, including poisoning.

Few caregivers had preschool children who were unintentionally poisoned by some agents and admitted to the hospital. Ahmed et al.(2011: 1) state that 30% of preschool children who experience unintentional poisoning will have one further incident before the age of six years. However, in this study findings revealed that only one caregiver reported that her child was unintentional poisoned twice. Alazab (2012:1107) and Ahmed et al. (2011:1) and Gutierrez et al. (2011:846) found (kerosene) paraffin) petrol, drugs, insecticides and household cleaning products are major hazards of poisoning incidents among children younger than six years.



Tsoumakas et al. (2009:372) revealed that high incidents of injuries including unintentional poisoning were higher in working mothers at 1.78 times. This is in contrast with the results of the study as 6 % of the preschool children who had suffered unintentional poisoning had unemployed parents. Similar findings are reflected by Özdemir, Bayrakci, Teksam, Yalçın and Kale .(2012:251) and Tsoumakas et al. (2009:373) that demographic and social factors such as the age of the child, educational status of the caregivers, may contribute to the risk for poisoning in preschool children.

3.3. FINDINGS LITERATURE CONTROL AND DISCUSSIONS

The researcher conducted a content analysis of data by listening and re-listening repeatedly to all audio recordings of the focus group interviews to find answers to the following questions posed during the focus group interviews (view Annexure B).

What are you doing at home to make sure that your small child or children will not eat or drink anything harmful?

Probing questions were used to clarify answers (view Annexure B). Thereafter the researcher transcribed the recorded data word for word (verbatim) with no exclusion of what the participants said. Field notes were also read and added to the transcripts for a meaningful message (view Annexure K). After re-listening to the audio-recorded data to become familiar with the content, the researcher re-read the transcriptions to search for in-depth information and meaning (view Chapter 2 and Annexure K). The researcher then wrote the most appropriate words to identified themes and sub-themes in a priority format.

Three themes emerged namely: Indoor safety practices, Outdoor safety practices, and Consideration of child's developmental skills. Ten sub-themes emerged and these are reflected in Table 3.3.

Table 3.3: Summary of the themes and sub-themes:

Themes	Sub-themes
Theme 1 Indoor safety practices.	1.1. Access to medication by preschool children.
	1.2. Access of preschool children to poisonous substances, such as harmful chemicals, cleaning products and insecticides and pesticides.
	1.3. Storage of poisonous substances.
	1.4. Knowledge of indoor safety practices.
	1.5. Acknowledgement of own indoor safety practice.
Theme 2 Outdoor safety practices.	2.1. Knowledge of poisonous plants.
	2.2. Knowledge of outside environment hazards.
Theme 3. Consideration of child's developmental skills.	3.1. Consideration of preschool children's ability to understand safety practices.
	3.2. Education of preschool children about safety.
	3.3. Supervision of preschool children.

Findings are discussed in the next section according to themes and sub-themes. Quotes are used to support the findings in the themes or sub-themes, and then literature was used to clarify and support the findings.

3.3.1. Indoor safety practices

The indoor safety practices emerged as the first theme. This theme outlined the safe and unsafe practices of caregivers in Elias Motsoaledi Sub-district in Limpopo Province of how they practice indoor safety regarding unintentional poisoning among preschool children.

Table 3.4. Indoor safety practices

Themes	Sub-themes
Theme 1. Indoor safety practices.	1.1. Access to medication by preschool children.
	1.2. Access of preschool children to poisonous substances, such as harmful chemicals, cleaning products and insecticides and pesticides.
	1.3. Storage of poisonous substances .
	1.4. Knowledge of indoor safety practices.
	1.5. Acknowledgement of own indoor safety practices.

Five sub-themes emerged from the aforementioned theme (see Table 3.4), namely access to medication by preschool children; access of preschool children to poisonous substances such as harmful chemicals; cleaning products; insecticides and pesticides. how caregivers store their substances; their knowledge of indoor safety practices and acknowledgement of own indoor safety practices. Each sub-theme is discussed in the sections 3.3.1.1 to 3.3.1.5 below.

3.3.1.1. Access to medication by preschool children

The first sub-theme revealed both safe and unsafe practices of caregivers in Elias Motsoaledi Sub-district, Limpopo Province regarding accessibility to medication that could result in unintentional poisoning amongst preschool children.

The findings of indoor safety practices regarding access to medication, had a few of the participants declaring that their children couldnot be unintentionally poisoned, as they do not use or keep any medications in their houses. They further said that they or their children did not suffer from any health problems recently to stress the point that no medications were left for easy access. This indicates that their preschool children are safe as they are not exposed to medication. Examples of the findings participants are presented verbatim.

⇒ **The participants used the following quotes:**

- *"Usually there is no pills in the house we don't use them"*
- *"I don't use medications"*
- *"My children cannot be poison by pills because I don't usually use them"*
- *"Nobody is drinking pills in the house"*
- *"I don't use pills or any harmful substance in my house"*

Participants in the focus groups further indicated that to ensure the safety of their preschool children, they put medication and pills on top of lockable wardrobes, lockable cupboards, and lockable dressing table drawers and top areas out of reach of children. Participants mentioned that she puts the medication under a mattress in her bedroom out of reach of the children. Other participants responded that they put some medication, especially those for children, inside the door of the fridge. The results reveal that caregivers are aware and knowledgeable regarding the dangers of household substances and the vulnerability of preschool children.

⇒ **The participants used the following quotes:**

- *"My medication I put it inside the wardrobe and her medication I put it inside the fridge door"*
- *"Pills I put on top inside the cupboard"*
- *"Pills are mine put on top of the wardrobe"*
- *"I use pills and I put them in the wardrobe and lock"*
- *"I put my pills under the mattress"*
- *"I have a small bag I put my pills there and put it inside the wardrobe on top"*
- *"Me I put pills on top part of the kitchen cupboard, but I lock after using them"*
- *"I put in the dressing table drawer, then I lock"*

However, some of the participants do not practice indoor safety. Findings revealed that some of these participants in the focus groups store their medication in wardrobes in the bedrooms which are not lockable. Other participants store medication inside the drawers of the headboards and dressing table drawers. Some of

the medication is stored on top of the dressing tables, unlockable kitchen cupboards and unfunctioning fridges. Some of the participants do not hide medication, they put it in the vicinity where children can be able to reach it easily.

⇒ **The participants used the following quotes:**

- *"I put medication in the wardrobe drawer, but it can open because they can open it"*
- *"I put them faraway in a wardrobe, but I don't lock as I don't have toddlers or pre-schoolers they are all adult and this infant"*
- *"My mother pills when she come from the clinic we put it in a plastic bag and tie it and put it in a kitchen cupboard only me, her and my other older siblings knows where they are the younger ones don't know"*
- *"I put pills and medication on topdrawer, and I am sure the young ones can't reach"*
- *"I put my pills in the headboard drawer"*
- *"Pills we put in the non-functioning fridge"*

In the further findings of unsafe indoor practices, one participant revealed that her mother's medication stays next to the television set in the sitting room. Another participant related that a family member puts medication in the breadbin which is meant for bread and this increases temptation and exposure of preschool children for accidental poisoning. Some participants said they store medication in the cooler box. Participants in separate groups responded that they put medications in toiletry bags or ordinary bags. Others said they use containers and put them on top of drawers while other participants indicated that they use buckets with lids. The researcher interpretations shows that caregivers are lacking insight and do not recognise danger regarding unintentional poisoning of preschool children.

⇒ **The participants used the following quotes:**

- *"When my mother came from the clinic she does not hide her pills she put them near the Television"*
- *"My aunt put her pills inside a breadbin"*



- *"Medications we put in a cooler box"*
- *"I bought a toiletry bag I put all the medications there and zip it"*
- *"My pills are inside the bucket if I want to use them I take it out then I put them back and close the lid"*
- *"My pills I put them in the bag and put them in the dressing table"*
- *"The medication for children I have put it in a container and put on top of a drawer"*

⇒ **Discussion and literature control**

In this study, non-usage of medication was revealed by few caregivers as a strategy of safe practices regarding unintentional poisoning among preschool children. The researcher searched the literature for related results, but none were found.

Results regarding safe indoor practices as revealed by Hassan, Qadri, Mir and Ahmed (2013:91) for developing countries indicated that only 30% parents of children who were unintentionally poisoned reported safe storage of hazardous substances at home. This is equivalent to the results of this study as few caregivers revealed that they lock medications in high areas to prevent access by preschool children. It further concurs with the recommendation of the American Academy of Paediatrics that all medicines, household products, and personal care products to be kept in a locked cabinet (Hassan et al. 2013:92;). In this study, findings were that one caregiver practiced safety by putting pills under the mattress.

However, the results further reveal that some caregivers store medication without easy access to preschool children by hiding it faraway but not necessarily locking it away. Gibbs et al. (2005:375) also reveal that the main standard safety procedures used by parents were to store harmful products in an overhead cupboard that was out of reach of children with little evidence of locking the cupboards. This is supported by Tyrrell, Orton, Tata & Kendrick (2012: e831), that safe storage practices include the storing of poisonous substances after use since most poisonings occur when substances are left unattended where children can easily access them.



In the findings, caregivers also mentioned that they store medication, especially syrup for children, inside the door of the fridge. However, they did not mention that they lock the fridge. The researcher believes that the afore mentioned statement for safety practices is unsuitable, but due to health education directives given to caregivers in health care centres, using child resistance lids is necessary and the researcher declares the statement suitable for safety practices regarding unintentional preschool poisonings. Sutthritpongsa, Sonjaipanich, Chomchai & Kraison Lomjansuk, (2016:21) indicates that children around two years of age can open screw lid bottles and ingest substances easily.

The results show that many caregivers do not practice indoor safety. Preschool children have easy access to medication as it is always within their reach. Caregivers store their medications in bags, unlocked drawers, top of the dressing table, buckets with non-resistant lids and boxes. Caregivers do not perceive possibility of unintentional poisoning surrounding their preschool children in their houses. The afore mentioned findings are outlined also in a study by Hassan et al. (2013:91) that cases of unintentional poisoning among young children occur at home, with the kitchen being the most familiar place of all followed by the bedroom and bathroom, handbags, fridges, and shelves. Children reach toxic substances in the medicine cabinet, even in a purse or other places where medications are stored (Mohammed et al. 2013:2).

In this study, another unsafe practice that differed from literature findings was the unsafe practices by using cooler boxes, unused fridges, and buckets as medicine storage units by caregivers. This is another poor perception by caregivers of strategic safety practices. Preschool children associate cooler box and buckets for cold beverages (juice and cool drink) and water.

As revealed in the findings, one caregiver stated that her grandmother put her pills next to the television while another stated that her aunt put her pills in the breadbin. Vasanthan, James, Shuba, Abhinayaa & Sivaprakasam, (2015:190) reveal that the



second most common cause of poisoning is ingestion of drugs, as these were medications taken for therapeutic purposes by the adults or the children and were kept in an easily accessible area.

According to Gibbs et al (2005:375). products were often abandoned when children had to by pass them According to Marriott, Ashby and Ozanne-Smith (2003:268) substances ingested by young children often had been used by another person in the household in the previous 24 hours.

Mohammed et al. (2013:2) states that the largest number of poisoning happen in the living rooms. The visual stimulation (younger children act on what they see) arouses children's curiosity and therefore it is easy for preschool children to access them.

Balme et al. (2012:145) are of the opinion that if there were unsafe indoor practices, it would result in poisoning of preschool children. The aforementioned findings are parallel with this study where findings revealed that many caregivers do not practice safety regarding medication accessibility thus preschool children are expose to unintentional poisoning. This is supported by Dayasiri, Jayamanne and Jayasinghe (2017:6) that preschool children become victims of unintentional poisoning as a result of unsafe storage of potential poisonous substances.

Agarwal, Williams, Tavoulareas and Studnek (2015:49) indicate in their study that medications in preschool children's homes are found in the kitchen, bathroom and bedroom. They further reveal that medication storage devices are pill organisers, baggies and pill bottles Agarwal et al. 2015:49). In this study, it was found that exclusive storage devices are used in the houses such as mattress, wardrobes, kitchen cupboards, bathroom cupboards, drawers, television stand, breadbin, cooler box, inside the fridge, outside an unused fridge, first aid kit bag and bags.

One may conclude that storage and access to medication is still a challenge as few caregivers practice indoor safety. However, many caregivers opt for' unsafe indoor

practices regarding unintentional poisoning among preschool children is still a gap that need to be addressed.

3.3.1.2. Access of preschool children to poisonous substances, such as harmful chemicals, cleaning products and insecticides

Sub-theme 2 revealed the access of preschool children to harmful substances such as chemicals; paraffin (kerosene), cleaning products; bleach, insecticides; eg Blue Death™ organic phosphates and other pesticides.

Indoor safety practices' findings revealed by some participants that some of the children are not exposed to harmful substances. A few of the participants revealed that their preschool children had no access to chemicals, cleaning products, insecticides and pesticides as they were not used or kept in the house. This shows that they are safe against unintentional poisoning with these products. Caregivers are applying protective and preventive practices regarding unintentional poisoning of preschool children.

⇒ Participants used the following quotes:

- *"I don't use paraffin"*
- *"I don't buy poisonous substances"*
- *"I use paraffin to do floor polish, and I don't store it I finish it when using it"*
- *"We don't use paraffin we cook with electric stove"*
- *"Hmm... I don't use any insecticide"*
- *"I don't usually use pesticides"*

Participants in different focus groups stated that they practice safety to prevent unintentional poisoning of preschool children by keeping cleaning products such as bleach, Handy Andy™ and soaps in locked top kitchen cupboards. Participants related to the use of the locked bathroom cupboards for keeping cleaning solutions such as soaps, and toilet cleaning products as safety practices.

⇒ **The participants used the following quotes:**

- *"Cleaning material like Jik™ and Handy Andy™ we put them on top of the cupboard in the kitchen"*
- *"I locked cleaning products because the child opens the cupboard and take out solutions, I lock and remove the key"*
- *"The bottom of the cupboard we put Handy Andy™ floor polish Jik™ and everything that we think is dangerous then we lock"*
- *"Poisonous solutions I put it on top like toilet cleaning product as we have a toilet in the house we put on top of the cupboard in the bathroom"*

Regarding the use and access to harmful substances, the participants revealed that they use insecticides and pesticides in the form of Blue Death™, Ratex™, organic phosphate and Jeyes fluid™. One participant said she practices safety by pouring Blue Death™ in concealed areas when it is in the vicinity of the children; she guards the children not to eat the poison. Some participants revealed that they put harmful substances safely by hiding them in the wardrobes. One said she puts the substance on top of the wardrobe. Some participants revealed that they put insecticides with cleaning products but always lock the cupboards. One participant stored Jeyes fluid™ in the bedroom and locked it. She also revealed that she puts insecticides behind an old stove where children cannot reach it. Mosquito coils are also stored in a lockable area. Caregivers are aware of the toxicity of the substances that can result in unintentional poisoning of preschool children

⇒ **The participants used the following quotes:**

- *"I use Blue Death™ I pour it where there are ants then I hide it on the wardrobe"*
- *"Me when I use Blue Death™ I put it in concealed places where children cannot reach, but if I poured it on exposed areas I guard them not to eat"*
- *"I put blue death on top of the wardrobe"*
- *"Ratex™ we hide it because children can eat it on top of my mother wardrobe"*
- *"Ratex™ we put in a bag and put it on top of the wardrobe"*

- *"Mosquito coil™ we put it with cleaning product we take it when we use it then lock"*
- *"Jeys fluid™ stay in the bedroom, but she used it to wash dishes but she locked her bedroom children cannot enter there"*
- *"I put the insecticide with the cleaning product, but I lock always"*
- *"I got an old stove those insecticide I put behind that stove the child cannot reach there"*

The unsafe indoor practices of caregivers regarding unintentional poisoning amongst preschool children include the storing of cleaning products such as bleach, Sunlight™ dishwasher, and Handy Andy™ in various parts of the kitchen. Cleaning products are put on the floor and in unlocked kitchen cupboards. Some of the participants further store cleaning products on the floor, under the table, on top of the table in the kitchen and toiletries on top of the dressing table. Caregivers are exposing their preschool children to danger as they are not practising safety strategies with regard to unintentional poisoning.

⇒ **The participants used the following quotes:**

- *"I put them on the cupboard like in the zinc cupboard children cannot open and take them and they don't play in the kitchen"*
- *"I put Jik™ and other cleaning products on the floor under the table but now I will put them safe"*
- *"I put my Jik™, soap on top of the table in the kitchen"*
- *"I put cleaning products like Jik™ on top the cupboard so that children cannot reachthey are still young"*
- *"Me I have a bucket where I put soaps and steel wool I put it in the table"*

They revealed that they put their cleaning products such as bleach, dishwasher, Handy Andy™ and washing powder, and bar soaps in the window seals, be it in the kitchens or bathrooms.

- *“Washing soaps, we put in the cupboard and washing powder we put in the window seal”*
- *“I put Jik™, soap, hand andy in the widow sill”*
- *“Sunlight™ soap we put them in the window sill”*

Other aspects of easy access were the findings of unsafe practices where participants did not lock away chemicals such as paraffin (kerosene). They stored them behind cupboards in the passage way which was within easy reach of preschool children. Other participants stated that they put it on top of the kitchen cupboard. Some participants declared that they do not hide paraffin in their houses. Others said that they put paraffin on the floor. One participant said she puts paraffin on top of an unused fridge in the kitchen. Caregivers lack insight about proper storage of harmful substances.

⇒ **The participants used the following quotes:**

- *“But...my carelessness with paraffin is that I put the bottle on top of the cupboard”*
- *“We put paraffin on the floor behind the door”*
- *“No, we don’t hide paraffin”*
- *“I put paraffin behind the cupboard as our cupboard has a passage (demonstrating with hands) where children cannot reach”*
- *“Paraffin we put it on top of an unused old fridge”*
- *“We put paraffin and all cleaning products on top of the kitchen cupboard”*

Insecticides such as Blue Death™ is used to eradicate ants. Two participants stated they put Blue Death™ in concealed areas and behind the cupboards where children cannot reach. One participant mentioned that she poured it in the house corners and waited for a few days before removing it. This statement constitutes unsafe indoor practices regarding unintentional poisoning.

⇒ **The participants used the following quotes:**

- *"Me when I use Blue Death™ I put it in concealed places where children cannot reach"*
- *"Me I poured ants poisoning like in the corners then I live it for two days then I remove"*
- *"We pour those poison to kill ants behind cupboards so that children cannot see them"*

Further unsafe indoor practices were revealed by a few participants when they stated that they use pesticides such as Ratex™ and organic phosphate. They use them during the night when everybody is asleep and in the morning, they wake up first to remove them before everyone else wakes up. One participant acknowledged that they made a mistake by putting Ratex™ or organic phosphate next to the cupboard which can result in unintentional poisoning of preschool children. Two participants revealed that they mix organic phosphate with food to kill rats and pour it where rats are always found, for example in the kitchen cupboards. This reveal that the exposure to unintentional poisoning of children is very high as preschool children are curious playing on the ground. One participant revealed that they store organic phosphate on top of the cupboard where children cannot reach.

⇒ **The participants used the following quotes:**

- *"Me if I poured poisoning for such as rats I pour it during the night and in the morning, I sweep remove it before the child wake up"*
- *"We pour those poison to kill ants behind cupboards so that children cannot see them"*
- *"Poisoning for killing rats we pour it next to the cupboard this is our problem we don't put it far as we are supposed to put it far"*
- *"We use organic phosphate for killing rats put it in the food so that rats can eat"*
- *"Top of the cupboard where the child cannot reach even I use a chair to reach it, I use organic phosphate"*

- *We use those to kill ants we put it on top of the cupboard we don't lock"*

⇒ **Discussion and literature control**

Findings in this study revealed that a few caregivers did not use chemicals such as paraffin, insecticides and pesticides as a strategy to practice safety. One revealed that she uses paraffin only for floor polish and uses all of it up per application. This finding is similar to Schwebel, Swart, Azo Hui, Simpson and Hobe (2009:702) in their study of paraffin-related injuries; only one participant reported to using paraffin occasionally. The difference in this study few participants reveals that they never use or buy paraffin (kerosene). While in the study of Schwebel et al. (2009:702) they revealed that about 80% of the participants were using electricity and some use paraffin as the primary fuel for cooking.

Further findings revealed that caregivers practice safety by not buying or using insecticides and pesticides. The researcher further searched for literature control pertaining this finding and none was found.

Hyder, Sugerman, Puvanachandra, Razzak, El-Sayed, Isaza, Rahman & Peden, (2009:348), reflected that only 30% out of 1515 parents of poisoned children who replied to the question about storage reported proper storage of hazardous materials at their homes. Related results are found in this study where few caregivers were practising indoor safety by storing cleaning products such as bleach, Handy Andy™ and washing powders in a lockable kitchen and bathroom top and lower cupboards. The difference is that the sample of this study was small (57) compared to the sample in the consulted literature in this results few caregivers were practicing safety while many were not practicing safety strategies as a results of ignorance, negligence and lack of knowledge.

Regarding storage caregivers put organic phosphate on top of the cupboard where children could not reach. Others mentioned this word "hide" to mean safety without mentioning locking. these findings are supported by Sekar et al. (2015:28) they state that more attention should be directed towards dealing with the poisonous materials



at home, these materials should be placed and stored in sites out of reach of children. Supported by Tyrrell et al. (2012: e831) they indicated that cleaning products should be above the adult eye level with substantial proportions stored in unlocked locations.

In safety practices, Schmertmann et al. (2013:14) indicate that if caregivers have a positive control of poison storage this can decrease parenting stress towards unintentional poisoning. Masjak, Newman, Benford, Ablewhite, Clacy and Coffey (2014:2) state that potentially modifiable risks such as accessibility and unsafe storage of harmful substances could prevent unintentional poisoning. Caregivers in this study stored cleaning products such as bleach and soaps in unlockable areas on the floors, under or on top of tables and toiletries on top of dressing tables which is an unsafe indoor practice can lead to unintentional preschool poisoning.

Further findings revealed that many caregivers regard window sills as an indoor safety practice. They use kitchen and bathroom window sills for storing cleaning products.

Gibbs et al. (2005:376) reveal that the issue of convenience is a barrier to safe practices which is reflected in high incidence in children accessing products while they are in use. Similar to the study findings were that caregivers use window sills for storage without regarding the safety of preschool children. In agreement Arnold, van As and Numanoglu (2017:183) indicate that household cleaning agents are the most common causative chemical agents, usually because of unsafe storage or use while small children are ill-advisedly allowed in the vicinity

The statement of the window sills storage is also unsafe when considering the developmental skills of the preschool child. This opinion is supported by Mohammed et al. (2013:1) where they revealed that preschool children learn to use chairs and climb up to reach things that are kept, supposedly, out of their reach. Hassan et al. (2013:91), indicate that unsafe storage such as storing at the height of fewer than two metres and accessible places for young children, and unlocked storage of common household chemicals, and medicines are other determinants of childhood poisoning. Schmertmann et al. (2012:2) also indicate that the type of harmful substances accessed



and ingested by children may correlate to different ages and different heights at where the substances were stored at home.

Regarding paraffin or kerosene, indoor unsafe practices of some of the caregivers were unlockable areas, behind cupboard, passages, and top kitchen cupboard, top of the unused fridge and even on the floor behind the kitchen door. These areas are all within easy reach of preschool children. One caregiver further declared that she does not hide paraffin in the house. Similar findings found in Schwebel et al. (2009:703) revealed that people know little about how to keep themselves safe and they engage in many unsafe practices relating to paraffin usage.

A finding in this study was that caregivers use insecticides (Ratex™ and Blue Death™) and pesticides (organic phosphate) at night and remove them in the morning before preschool children wakes up. Further, the incidence of leaving pesticides overnight is found in the study of Munro, van Niekerk and Seedat (2006:275) that a mother left pesticides overnight in accessible areas and the next morning the child had mistaken it for a sweet and ingested it. This accessibility was also seen in this study, where a caregiver poured Blue Death™ in concealed areas and left it for 1-2 days before removing it which exposed the children to unintentional poisoning. Hassan et al. (2013:92) state that caregivers should always be encouraged to keep toxic substances out of the reach of children; even if they are stored in children resistant products.

Balme and Roberts (2013:25) reveal that in South African cities, there is a recent upsurge in poisoning from pesticides bought from street vendors which are highly toxic such as organophosphate. In this study, regarding handling and usage, it was found that caregivers mix organic phosphate with food and pour it under the kitchen cupboards which is incorrect usage; the potential of unintentional poisoning of preschool children is very high. Therefore, more care should be directed towards the type of pesticides, the correct use, storage, and handling of these pesticides (Sekar et al. 2015:28).



These findings further revealed that caregivers were acknowledging that they have been making a mistake by putting Ratex™ or organic phosphate next to the cupboard which can result in unintentional poisoning of preschool children. Regarding unsafe practices in chemicals, insecticide, and pesticide, Patil, Peddawad, Chandra, Verma, and Gandhi (2013:3) mention that attention should be directed towards dealing with poisonous materials at home. These materials should be placed and stored in sites out of reach of children (Sekar et a, 2015:28).

After this discussion, the researcher is of the opinion that some caregivers practice safe storage while others are still lacking safe and inaccessible storage practices. From the findings, it was clear that household products, insecticides, chemicals and pesticides are the most used agents that can cause poisoning and safe storage in inaccessible places for preschool children is important.

It also indicates that the storage height of some poisonous substances plays a role in the prevention of unintentional poisoning among preschool children. Results revealed that unlockable indoor storage areas are the most vulnerable areas which may result in unintentional poisoning in preschool children.

The reflection based on the findings and discussions for this sub-theme is that non-usage, and proper storage (inaccessible) of harmful substances reduces unintentional poisoning in preschool children.

3.3.1.3. Storage of poisonous substances

The third sub-theme deals with caregivers' unsafe practices regarding the storage of poisonous substances.

The participants indicated that they buy and store chemicals and other energy generating chemicals such as paraffin(kerosene) using unsuitable containers such as cool drink bottles and milk containers. Other participants said they protect their

children from drinking the poisonous substances by removing the cool drink label or writing on the containers that it contains paraffin.

⇒ **The participants used the following quotes:**

- *"I use 2litre container of cool drink"*
- *"I use a previous used 5litre milk container"*
- *"We buy paraffin using a 2litre cool drink bottle of which children knows that cool drink is for drinking this is the mistake we do at home"*
- *"I bought paraffin with a 4litre previous milk container"*
- *"I use a 2L Nkomazi™ milk container"*
- *"2l cool drink bottles when they are empty sometimes we put paraffin in them which is wrong"*
- *"I put paraffin in a 2litre cool drink but I remove the label, and I put it where the child cannot reach"*

⇒ **Discussion and literature control**

Studies indicated that paraffin (kerosene) is the most common poison ingested by children in developing countries (Hyder & Peek-Asa 2010:113; Balme et al. 2013:5). Other studies by Saleem, Ejaz, Arif, Hanifa, & Habib (2015:5) and Tshiamo (2009:142) reveal that unsafe storage of chemicals such as paraffin (kerosene), oil and bleach in substandard containers without child resistance caps and previous soft drink bottles results in unintentional poisoning. This was also found in the study that caregivers use unsuitable containers as a storage of paraffin (kerosene) which is unsafe as preschool children can be unintentionally poisoned.

Moreover, children around two years of age can open screw lid bottles and ingest substances easily (Sutchritpongsa et al. 2016:21). In this study, it was found that cool drink containers did not have child-resistant lids and could be easily opened by preschool children



Schwebel et al. (2009:1) also reported that children are at significant risk as paraffin has the appearance of water and is stored in previously used beverage containers without child resistant caps. When children are unsupervised, they are at a higher risk for ingesting paraffin. Gevaart-Durkin, Swaart and Chowdhury (2013:7) state that children would commonly mistake a reused milk jug or cooldrink bottle full of paraffin as water, especially during summer months and subsequently drink the contents resulting in unintentional poisoning. In this study, caregivers used cooldrinks bottles for paraffin and water which is a very high risk to a preschool child unable to differentiate between the two. Caregivers shows negligence regarding the safety of their preschool children.

Schwebel et al. (2014:248) elaborate that children categorise potentially poisonous packages by considering the shape, size, labelling and colour to decide whether to eat, drink or avoid the product. Schwebel et al. (2009:704:) further indicate that knowledge, practice and perceived risk of paraffin safety is a significant public health problem worldwide and in South Africa. Gibbs et al. (2005:375) conclude that many parents were surprised to discover that products without warning labels or child resistance caps could be dangerous to their children.

Schwebel et al. (2014: 244) further mention that labelling and product colouring might influence young children's categorisation of safe and dangerous household products by putting symbols such as an unappealing insect that a child can recognise that the product is unsafe and a picture of an apple symbolizing a safe product. In this study, it was found that removing the label of a cooldrink and writing paraffin could not help a preschool child regarding unintentional poisoning, because they are usually unable to read at this stage.

It is, therefore, clear that the use of beverage containers with no child resistant caps to put chemicals is still a health hazard and unsafe practice by caregivers.

3.3.1.4. Knowledge about indoor safety practices

Sub-theme 4: Caregivers' knowledge of indoor safety practices reflected on how they keep their children safe indoors regarding unintentional poisoning.

Participants said they put things such as deodorants (antiperspirant) and soap away from the reach of children because they are aware that children can eat them. One revealed that she practices safety by using a 5litre container to buy paraffin and put it on top of the cupboard out of reach of children. One stated that she uses an iron box to put all harmful substances and which is kept locked. One revealed that a lockable storage room inside the house could be advantageous for storage. Few demonstrated knowledge of the ambulance emergency number should the child be unintentionally poisoned.

⇒ **The participants used the following quotes:**

- *"Roll-on (antiperspirant) and soaps children can eat them we put them far"*
- *"In my house, we have a storage room it stays lock"*
- *"I take everything that is poisonous I put it on top of a cupboard, or I hide it in a place where they cannot reach"*
- *"I think if we can have an iron box and we put everything there and lock" (laughter)"*
- *"Put it on the cupboard top drawer with a lock pack everything there then you will know that the child cannot reach"*

Other participants showed lack of knowledge of any indoor safety practices, they did not have the ambulance number and did not have any idea what to do to protect their children or make the indoor area safe. A small group of participants did not answer any question and remained silent, even when the researcher asked probing questions.

⇒ **The participants responded as follows:**

- *"I think is ambulance number is..... 121 (I am not sure)"*
- *"(Shaking her head and shrugging her shoulders) Investigator: "You mean you don't know" :(Nodding her head shyly)"*
- *"I don't have any idea what can make children to be safe"*
- *I know it is 112, but it is very slowly to get an answer"*

Discussion and literature control

Nadeeya, Rosnah, Zairina & Shamsuddin, (2016:107) on the other hand found that mothers have moderate knowledge regarding home poisoning in children and safety measures but it was found in this study, that very few caregivers knew about other indoor safety practices that can protect their preschool children.

Gutierrez et al. (2011:845) reveal that caregivers demonstrated poor knowledge in home poisoning prevention strategies. Tsumakas et al. (2009:371) reveal that in their study, parents' adherence to preventive measures, 48.7% of them considered that their knowledge was insufficient while 53.9% claimed lack of information as they were not informed.

Raj (2013:45) is of the opinion that knowledge of the emergency telephone numbers of the poisoning Control Centre is a crucial factor. In this study, only a few (about five) knew the ambulance telephone numbers.

Regarding lack of knowledge, Eldosoky (2012:1013,1022) reflected that mothers in their study did not have enough knowledge of first aid practices after their children became poisoned. In this study in all the groups, caregivers did not know the correct first aid to administer regarding unintentional poisoning. Eldosoky (2012:1022) further indicates that there are few published studies on parental knowledge and attitudes concerning childhood poisoning.

It may be concluded that knowledge and education about indoor and outdoor safety practices and first aid measures are of importance regarding unintentional poisoning of preschool children.

3.3.1.5. Acknowledgement of own indoor safety practices

The participants in this sub-theme acknowledged their short falls regarding indoor safety practices. The participants were aware of the fatal effects that poisoning agents can have on preschool children and they acknowledged their lack in following safety practices. Some participants revealed that they know safety practices even if they do not practice them.

Other participants revealed that preschool children know that cool drink bottles carry cool drinks although they use them for paraffin (kerosene) storage. They further acknowledged that it was their mistake for not practising safety measures by putting chemicals and other harmful substances away from the reach of children. In the above statement caregivers shows some guiltiness for not practising safety regarding unintentional poisoning of preschool children.

⇒ The participants used the following quotes:

- *"2l cool drink bottles we use it to put water when they are empty sometimes we put paraffin in them which is wrong every poisonous substance need not be put in empty containers of cool drinks"*
- *"2l cool drink bottle children knows that is for cool drink better to remove the label and put another label write paraffin"*
- *"Children they like to put everything in the mouth and like the 2litres they think is water while we have put paraffin on them"*

⇒ Discussion and literature control

Tsoumakas et al. (2009:371) reveal that 64.8% parents in their study about adherence and preventive measures regarding unintentional poisoning answered that they did

not apply the measures that they already knew. This concurs with Gibbs et al. (2005:375) in their findings that they revealed that parents were aware of the need for poisoning safety strategies, and were implementing them to various degrees but not comprehensively in the home. In this study, only a few caregivers acknowledged their negligence such as the use of unsuitable containers, cooldrink bottles and storing paraffin(kerosene) in them.

The researcher found that the caregivers were honest, acknowledged their indoor safety practices and reflected themselves as being reluctant to practice them, or negligent in practicing safety.

The following theme and relating sub-themes fall under outdoor safety practices.

3.3.2. Outdoor safety practices

Outdoor safety practices emerged as the second theme, and three sub-themes were identified under this theme, namely knowledge of poisonous plants, knowledge of outdoor environmental hazards and non-recognition of extreme environmental hazards. This section discusses the two identified sub-themes.

Table 3.5: Summary of theme 2 and related sub-themes:

Theme	Sub-themes
2. Outdoor safety practices	2.1. Knowledge of poisonous plants.
	2.2. Knowledge of outside environment hazards.

3.3.2.1. Knowledge of poisonous plants

The first sub-theme that emerged for theme 2: Outdoor safety practices, explained the knowledge of caregivers in Elias Motsoaledi Sub-district in Limpopo Province about poisonous plants in the outdoor environment that can lead to unintentional poisoning in preschool children. The participants revealed some knowledge about poisoning plants and provided information about protecting their preschool children outside the

house. While other participants lack knowledge of what can harm their preschool children in the outdoor environment.

Few participants shared their knowledge about trees that are poisonous that need not be planted in their yards. They revealed that preschool children could be admitted to hospital when they eat of some of the fruits and leaves of these trees. Participants mentioned various types of trees that need not be planted in the yard because their fruits and leaves are poisonous when eaten. They mentioned trees with pink fruits and wild tree nuts called *ikonko* (native words for the wild nuts).

A few participants indicated that some of the flowers are poisonous, especially the ones with milky green leaves. They mentioned that these need not be planted in the yard as preschool children eat such flowers and they become sick and end up in hospital. They also mentioned flowers which bear fruit that look like tomatoes, which children can eat thinking they are eating tomatoes.

⇒ **The participants used the following quotes:**

- *"There is a tree that children eat then become sick"*
- *"There are certain trees when a child can eat will have a problem the trees have some pinkish fruit the child can wake up in the hospital if he eats those"*
- *"Some of the trees outside are poisonous"*
- *"Trees that have dry fruit like peanuts (ikonko) you don't have to plant at home because if children eat that they can die"*
- *"Its leaves the are some that come out milk they eat them without being seen"*
- *"There are others flowers they said are poisonous like another one at my house my sister was saying this flower if a child can eat she can wake up in the hospital I was not aware about it that it is poisonous"*
- *"There are flowers that are dangerous children eat them they need to be supervise outside"*
- *"There are flowers that bear fruit like tomatoes a child can eat thinking is tomatoes they are not supposed to be planted in the yard"*

However, many of the participants knew nothing about environmental plants that can unintentionally poison their children. They did not think of anything that could harm their children. Some of the caregivers shows lack of knowledge of environmental hazards.

⇒ **The participants used the following quotes:**

- "There is nothing that can harm a child outside"
- "I don't think of anything"

⇒ **Discussion and literature control**

Results about plant poisoning were revealed by Dayasiri, Jayamanne and Jayasinghe (2017:1) which include patterns of plant poisoning and various botanical, geographical, and socio cultural characteristics of different populations. In this study, plants known to the caregivers were outlined in the findings. Dayasiri et al. (2017:4) report that in urban Sri-Lanka, the *Alocasia* (elephant's ear plant) is the most commonly encountered plant in the home garden that can result in poisoning. In this study, commonly found plants were wild nut trees which in the native language are called *ikonko*. Craven, Hirnle, & Jansen (2013 587) are of the opinion that to keep poisonous plants out of young children's reach, they should be supervised outdoors.

Plant poisoning reported by Malangu (2014:429) included wild berries (*Vaccinium* species) and elephant' ear (*Colocasia* species) in South Africa and Botswana. In this study, a few caregivers mentioned milky leaves, a tree with pink fruit and flowers with tomatoe-like fruits. However many of the caregivers did not know about poisonous plants sorrounding their environment that can results in unintentional poisoning of preschool children.

This may conclude that various plants, as found in the different geographical areas, can cause unintentional poisoning in preschool children. There is a need for educational empowerment of caregivers about poisonous plants that need to be removed from their homes.

3.3.2.2. Knowledge of outside environmental hazards

This sub-theme revealed the knowledge of caregivers regarding other environmental hazards. Some participants explained that they put away things such as oil and petrol far from where children can reach. They locked these things in garages, shacks and iron boxes. Another participant stated that when the children are outside, they like playing on the ground and can eat anything such as ants.

⇒ **The participants used the following quotes:**

- *"Oil for cars is dangerous is not suppose within reach of the child"*
- *"Petrol or brake fluid needs to be kept far away from the child"*
- *"I am afraid that if he is outside can eat ants as he likes to be on the ground"*
- *"I am afraid that while I am busy out of my site, he can eat anything"*

⇒ **Discussion and literature control**

Balan and Lingam (2011:35) reveal that children are more vulnerable to unintentional poisoning due to their curiosity to experiment and explore their environment and their inability to understand or perceive danger. This study also agrees that some caregivers are aware that preschool children are always curious and can eat anything they come across. They further mentioned that they need to keep poisonous substances out of reach even in the outside environment. Safe outdoor practices are still important to avoid unintentional poisoning in preschool children.

Some of the participants were unable to recognise anything in the outside environment that could lead to the unintentional poisoning of their preschool children. Participants reflected that they do not think some substances can harm their preschool children outside the house or the yard. Others responded by shaking their head or becoming silent (view Annexure K). In another interview, some participants confessed that they had no idea what can cause harm to their preschool children in the outside environment. Participants further stated that they store chemicals such as paraffin and petrol in a shack which is not locked and justified that by saying, *children,*



usually, do not go there. One participant stored diesel in the back of an old, non-functioning vehicle.

⇒ **The participants used the following quotes:**

- *"There is nothing that can harm a child outside"*
- *"I don't have any idea what can make children to be safe"*
- *"I don't think of anything"*
- *"Petrol stays in the shack the child doesn't usually go there, and we don't lock as we put no more used equipment"*
- *"We store diesel at the back of the unused bakkie"*

⇒ **Discussion and literature control**

Manzar et al. (2010:5) in their study conducted in Pakistan, highlight the fact that ignorance, negligence and carelessness on the part of the caregiver lead to cases of unintentional poisoning. This study found that negligence was recognised in some of the caregivers regarding outdoor safety practices. Forjuoh (2016:1) reveal that preschool children between one to three years old have an increased risk to unintentional poisoning as they can grab and drink everything in their way. This statement supports that the preschool can be at risk to drinking anything hazardous in the outdoor environment as a results of negligence a caregivers.

Non-recognition of the outside environmental hazards by caregivers, may lead to unintentional poisoning of preschool children.

The following theme and relating sub-themes is the consideration of the child's developmental skills.

3.3.3. Consideration of child's developmental skills

Considerations of the child's developmental skills emerged as the third theme. The final theme outlines caregivers' perception of preschoolers' ability to understand, be

educated and supervised as factors which play a role in effective indoor and outdoor safety practices regarding unintentional poisoning of preschool children.

Table 3.6. Consideration of child’s developmental skills

Theme	Sub-themes
3. Consideration child’s developmental skills.	3.1. Consideration of preschool children’s ability to understand safety practices.
	3.2. Education of preschool children about safety.
	3.3. Supervision of preschool children.

Three themes originated from it namely, consideration of preschool children’s ability to understand safety practices, education of preschool children about safety, and supervision of preschool children.

3.3.1. Consideration of preschool children’s ability to understand safety practices

The first sub-theme relates to the caregivers beliefs that preschool children have limited developmental abilities which places them at the risk for unintentional poisoning. Yet the very same limitations can also predispose them to harm.

The findings below show that a few participants believed their children’s level of development would not place them at risk of unintentional poisoning because they were not tall enough or clever enough to reach high places or open the places ,where they stored away poisonous substances. In fact the participants relied on the preschoolers’limitation to keep their children from harm.

Participants related to the researcher that they put the medications, pills and chemicals such as paraffin on top of the wardrobes or cupboards and thought that a preschool child cannot reach that far. Another caregiver even stated that she uses a chair to reach

for substances such as organic phosphate and the child cannot reach that far. Cleaning products are kept on top of unlockable cupboards with the belief that children are still young and cannot reach that far.

One mentioned that she put cleaning products in the kitchen where preschool children cannot open. One mentioned that where she put paraffin, preschool children could not reach. One revealed that she put cleaning products on top of the cupboard and her children were still too young to reach it. On that point, they consider it is impossible for preschool children to be poisoned by some indoor substances, medications, chemicals and insecticides.

⇒ **The participants used the following quotes:**

- *"I put them on the cupboard like in the zinc cupboard children cannot open and take them, and they don't play in the kitchen"*
- *"I usually use paraffin but I put it in the house where children cannot reach where I put it I know they cannot reach"*
- *"Me I use paraffin for the floor polish and I put it behind the cupboard after use I know the cupboard is very heavy children cannot push it"*
- *"Me I put them on top of the cupboard where the child cannot reach even I use a chair to reach it, I use organic phosphate for rat"*
- *Things that are harmful like Jik™ I take it and use it and after I put on top the cupboard so that children cannot reach it as they are still young"*
- *"I put them on the top cupboard is locked she can't reach that far"*

⇒ **Discussion and literature control**

Erikson further highlights the interaction between increasing individual capabilities and an expanding social environment, with each development stage characterised by a dominant psychosocial crisis (Pretorius & Van Niekerk 2015:36). Vasavada and Pankti (2013:5) reflected that at two to three years old, the child's mobility and inventiveness allows them to access any unlocked drawer of the cupboard in the house. Sutchritpongsa et al. (2016:21) confirms that developing children can mobilise



themselves and explore their environment. This is in contrast with the findings of this study where caregivers had confidence with school children's safety and not considering the developmental characteristics. Developmental factors should be kept in mind as a risk for unintentional poisoning as preschoolers are at the stage of discovering their surroundings.

Schwebel et al. (2014:244) reveal that children of all ages seem to recognise some products as dangerous more often than others. He further says that aspects of packaging, labelling, and product colouring might influence young children's categorisation of safe and dangerous household products. The youngest age group misidentify dangerous products as safe (Schwebel et al. 245). This study's results suggest that children may use their developing skills in symbol recognition and categorisation to determine whether a product is safe or dangerous (Schwebel et al. 2014:248). Labels, in particular a picture of an insect on the insecticide bottle, seemed to help children recognise that bottle as dangerous. Symbols such as apples and grapes on the juice bottles may have helped children recognise those products as safe. Schmertmann et al. (2012:2) further indicate that the type of substances accessed and ingested by children may account for different ages which are stored in different height levels at home.

Parental knowledge and perception relating to children's developmental stages and the ability to understand safety practices are captured by Rosenberg et al. (2011:220) as "but they can't reach that high..." In this study, it was found that caregivers believe in preschool children's ability, developmental skills regarding age that the skills cannot allow them to reach certain poisonous substances. One caregiver even confidently said that she put cleaning products on top of the cupboard because the preschool children were still young and thus could not reach.

The child's cognitive development and skills means they cannot differentiate medicinal from non medicinal products. The risk is when the products are stored in a similar manner where children have equal access to them. Gaines and Schwebel (2009:1073)

accounted parental beliefs of their child being at less risk of harm than other children as a common human tendency in health related situations.

3.3.3.2. Education of preschool children about safety

This sub-theme relates to education given by caregivers to preschool children about safety indoor and outdoor practices regarding unintentional poisoning amongst preschool children.

Only a few participants revealed how they protect their children from unintentional poisoning by telling them what is poisonous and what is not. These participants see teaching as the most essential factor to protect their preschool children from poisoning.

In these findings, participants revealed that they tell their preschool children not to touch some poisonous substances. While others were saying they usually tell them that if they take this or that medication, they will be ill. Preschool children were told that medication, pills and chemicals are lethal. Others said they change the label and make them aware that it is no more a cool drink; it is paraffin. However, many of the participants did not mention anything about educating their children. This could reflect that they do not teach their preschool children anything about safety.

⇒ The participants used the following quotes:

- *"My child is three years old she knows that handy andy and washing powder soap you cannot eat I always tell her"*
- *"If... Hmm, the child is five years teach the child that this is paraffin is not a drink then you close them and put safe"*
- *"Teach the child that this thing is dangerous you eat you become sick, then you close them and put safe"*
- *"I put medication in the wardrobe drawer, but it can open because as they open it but I tell them that"*
- *"This is mama's pills don't touch is lethal" (laughter)*

⇒ **Discussion and literature control**

Hassan et al. (2013:91) are of the opinion that education based initiatives reduce childhood injuries including poisoning. Craven, Hirnle and Jansen (2013 587) indicated that caregivers need to teach children never to eat berries, mushrooms, seeds or plants found in the wild. In this study, it was found that education was given to preschool children about medication and chemicals and no outdoor education was given. The findings of this study revealed that very few caregivers gave their preschool children appropriate education about poisonous substances.

However, Kendrick, Majsak-Newman, Benford, Coupland, Timblin, Hayes, Goodenough, Hawkins, & Reading (2015 99) indicated that teaching safety rules can increase the risk of interactions with hazards and injuries in young children unless it results in a high level of understanding about the safety issue, therefore in their study they tend to differ in their findings and found that not teaching children safety rules was associated with a lower incidence of poisoning.

It may be concluded that education of preschool children regarding safety is of importance as a safety practice strategy. The point being made is that the age and developmental skills of a preschool child plays a role concerning education with regard to safety practices.

3.3.3.3. Supervision of preschool children.

The third sub-theme emerged as supervision of preschool children regarding safety practices.

The caregivers believed that supervision would reduce unintentional poisoning among preschool children. Some participants emphasised the need for supervision of the child indoors and outdoors. One participant indicated that she played with the child outside as a form of supervision. Another stated that when she is using chemicals such

as paraffin, she supervises the child closely. One stated that as a parent, she needed to check what the child was playing with always and be the child's friend. One participant mentioned that for safety, she takes older preschool children to crèche, where they return late and go to sleep. However, many of the participants did not mention supervision as a safety practice.

⇒ **The participants used the following quotes:**

- *"There are flowers that are dangerous children eat them they need to be supervise outside"*
- *"I play with her outside so then inside the house I stay with her and look after her"*
- *"When we want to use paraffin for floor polish we take it out, hmm...you must be near to supervise as you know how children are"*
- *"Be your child friend wherever he goes you need to be there"*
- *"I watch her where she plays she never left my eyes sometimes I play with her because outside the is a lot of dangerous things"*
- *"Older preschoolers they are always at crèche they came late and go to sleep, they won't have time to eat with such things as poisonous"*

One participants stated that when her child plays, she uses her listening skills and observation to see what the child is busy with. Few participants who were in that group did not verbalize but nod as a sign of agreement.

⇒ **The participants used the following quotes:**

- *"When my child is playing I always check what she is busy with or playing with"*
- *"I don't want her to be quite where she is"*

⇒ **Discussion and literature control**

Morrongiello, Zdzieborski, Sandomierski & Munroe, (2012:587) stated that maximum and active supervision are associated with the lowest risk of poisoning which



presumably occurs when the supervisor is attentively watching the child closely. Ablewhite, Kendrick, Watson and Shaw (2015:10) found that parents perceived parental supervision as important in reducing unintentional childhood risks. In this study, only a few caregivers perceived supervision as a critical factor regarding unintentional poisoning of preschool children.

Prominent factors relevant to the risk of poisoning in young children were the quality and quantity of supervision and safe practices in homes according to Schwebel, Wells and Johnston (2014:1). In this study regarding the quantity of supervision, many caregivers were not aware that preschool supervision is also an aspect of indoor and outdoor safety practices. The quality of supervision in this study was poor as one caregiver used poisonous substances at the same time supervising a preschool child. There was too much exposure of the child to poisonous substances.

Alazab (2012:1115) states that as part of supervision for safety practices, working mothers often arrange for children to be supervised or cared for in a selected environment such as a nursery or kindergarten. In this study, only one caregiver used crèche as a safety practice regarding unintentional poisoning.

As a supportive care of parents, it is important to protect children to prevent many accidents by keeping a watchful eye on them (Mohammed, Mohammed & Byoumi 2013:2). However, Morrongiello, Schell and Schmidt (2010:402) state that recently, sibling supervision should be recognised as a frequent practice in most families and may contribute to an increased risk of poisoning to young children. In this study, supervision was done by parents or at crèche. In the demographic information, one preschool child was brought up by a sibling that shows that the sibling was responsible for supervising and caring for the preschool child for the entire day.

The incidence of poisoning is increasing, perhaps, among children who receive less supervision (Sowmya, Shreedhara, Varghese & Sanjeeva 2014:1418). Dayasiri et al. (2017:4) in their study reported inadequate supervision as the strongest risk factor. In



this study, many of the caregivers did not mention supervision of preschool children regarding unintentional poisoning. It is also considered a risk factor in this study.

Caregivers use listening as a supervision strategy for boys more than girls (Ablewhite et al. 2015:10). In this study, some caregivers used the noise from the preschool child as a supervision skill yet not seeing what the child was actually doing. This caregivers strategies increases the vulnerabilty to unintentional poisoning amongst preschool children.

Therefore, supervision plays a critical role in promoting caregivers' safety practices regarding unintentional poisoning in preschool children.

3.4. CONCLUSION

It can be concluded that indoor and outdoor safety practices regarding medication, cleaning products, insecticides, chemicals and pesticides are still a challenge. Although few participants practice safety regarding storage of poisonous substances. However, many of the participants follow unsafe practices regarding unintentional

poisoning of preschool children. Caregivers acknowledge their ignorance regarding safe practices. Lack of knowledge regarding safety practices was also noted.

The following chapter outlines the conclusion and recommendations made for improvement and effective, safe practices of caregivers regarding unintentional poisoning among preschool children of Elias Motsoaledi Sub -district in Limpopo Province.



CHAPTER 4: CONCLUSIONS AND RECOMMENDATIONS

4.1. INTRODUCTION

This study aimed to explore and describe caregivers' safety practices regarding unintentional poisoning in preschool children in the Elias Motsoaledi Sub-district in Limpopo Province. The methodology selected was a qualitative method with descriptive, explorative and contextual approaches. In the previous chapter, a discussion was provided about the findings, using themes, sub-themes, and supported with relevant literature as a control to the findings and discussions. This chapter provides a conclusion about the problem identified and investigated, aim, research question and the methodology used. The conclusion reflected on the results of the study and the recommendations were based on the findings of the study.

4.2. BACKGROUND TO THE PROBLEM

This aim of this study was to explore and describe caregivers' safety practices regarding unintentional poisoning among preschool children in Elias Motsoaledi Sub-district in Limpopo Province. The reason for conducting this study was based on the researcher's concern about the admission rates of preschool children with unintentional poisoning from different agents in the paediatric unit in one of the hospitals in Elias Motsoaledi Sub-district (view Chapter 1: Table 1.1). Therefore, the researcher used this study to explore caregivers' safety practices regarding unintentional poisoning among preschool children in Elias Motsoaledi Sub-district. The research question formulated for this study was:

What are the safety practices of caregivers regarding unintentional poisoning in preschool children in the Elias Motsoaledi Sub-district in Limpopo Province?



4.3. METHODOLOGY

A qualitative method and explorative, descriptive and contextual design was selected for this study. This methodology was selected so that the findings could be based on realities of practices done by caregivers regarding unintentional poisoning among preschool children in Elias Motsoaledi sub -district Limpopo Province. This phenomenon and realities were unknown to the researcher.

The methodology assisted in answering the research question as stipulated above. Focus group were used to collect data.

The population included in this study were caregivers of children under the age of six years residing in the Elias Motsoaledi Sub-district in Limpopo Province. Purposive sampling was used as the method for sampling as caregivers were sampled while visiting four different primary health care clinics which are Elandsdoorn, Gateway and two Philadelphia mobile clinics. Caregivers who fit the criteria were recruited. Five (5) to twelve (12) were sampled per group and voluntarily participated.

The method was effective as data collected provided rich information and believable descriptions of how caregivers practice safe indoor and outdoor activities in their homes regarding unintentional poisoning among preschool children in Elias Motsoaledi, Limpopo Province. During data collection, no caregivers withdrew their participation during focus group interviews. Only two who were found that they did not fit the criteria were allowed to withdraw.

Content analysis was done, and themes and sub-themes emerged revealing the in-depth narrative information as practices by caregivers in the focus groups in different homes. Similarities, differences in practices were revealed during analysis. It was the right approach as caregivers described in depth the realities in their indoor and outdoor safety practices regarding unintentional poisoning among preschool children.



The findings were not generalised to other districts they were relevant to caregivers in the Elias Motsoaledi Sub-district, Limpopo Province regarding the safety practices on unintentional poisoning among preschool children.

4.4. DEMOGRAPHIC INFORMATION

A majority of the caregivers in this cohort consisted of preschooler parents and fair portion were the grand parents reflective of the family dynamics in Elias Motsoaledi sub district Limpopo Province. Almost all the (97%) the caregivers were literate and minor 3% illiterate which means caregivers could read and understand health information. Majority of the preschoolers are males (56%) and (44%) are females. Ninety four (94) % of the caregivers indicated that their preschool children never ingested any poisonous substance while 6% indicated poisonous substance ingestion by preschool children. Most of the preschoolers were between the age of five(5) to six(6) yrs (25%) and three(3) to four(4)yrs are 11%. (view Chapter 3 Table 3.2).

From the demographic information, it can be reflected that caregivers takes care of more than one preschool child. The recommendation is that, health information and education talks should be provided on to caregivers how to improve indoor and outdoor safety practices; to make child care easier.

4.5. CONCLUSIONS REGARDING SAFETY PRACTICES OF CAREGIVERS REGARDING UNINTENTIONAL POISONING

A brief discussion of the findings regarding themes and sub-themes is presented, followed by recommendations. Table 4.1. provides a summary of the theme and sub-themes.

Table 4.1. Themes and sub-themes

Themes	Sub-themes
Theme 1 Indoor safety practices.	1.1. Access to medication by preschool children.
	1.2. Access of preschool children to poisonous substances, such as harmful chemicals, cleaning products and insecticides.
	1.3. Storage of poisonous substances.
	1.4. Knowledge of indoor safety practices.
	1.5. Acknowledgement of own indoor safety practice.
Theme 2 Outdoor safety practices.	2.1. Knowledge of poisonous plants.
	2.2. Knowledge of outside environment hazards.
Theme 3. Consideration of child's developmental skills.	3.1. Consideration of preschool children's ability to understand safety practices.
	3.2. Education of preschool children about safety.
	3.3. Supervision of preschool children.

Data were clustered to three themes and accompanying sub-themes (view Annexure L). The researcher became aware of the following:

4.5.1. Indoor safety practices

4.5.1.1. Access to medication by preschool children

The study found that safe indoor practices regarding access to medication were practiced by caregivers in Elias Motsoaledi Sub-district in Limpopo Province:

- A few caregivers in this study did not use medication as they and their preschool children hardly fall ill.



- Some caregivers put medication out of reach and under lock and key, in areas such as the top of wardrobes, kitchen cupboards, under mattress, drawers and first aid kit boxes and lock.
- Some used words such as “faraway” and “hide” which implied out of reach of preschool children.
- Some caregivers mentioned that they stored their children’s medication inside the fridge door, medications have child resistance caps. (they follow a health directives).

Unsafe practices practices regarding access to medication include:

- Medication storage was within reach of preschool children as caregivers were using bags, unlocked drawers, top of the dressing tables, buckets with non-resistant lids, boxes, cooler boxes and unused fridges as storage for medication.
- Further unsafe practices were putting pills next to the television and in the breadbin.

Therefore, if medication could easily be accessed by preschool children which can lead to unintentional poisoning.

4.5.1.2. Access of preschool children to poisonous substances such as harmful chemicals, cleaning products, insecticide and pesticides

Safe practices regarding access to poisonous substances such as harmful chemicals, cleaning products, insecticides and pesticides:

- It was found that few caregivers did not use paraffin or cleaning products and this is how they practice safety.
- A few caregivers indicated that they lock away the poisonous substances; using top and lower cupboards, drums, and a special storage rooms.

Unsafe practices in this regard include the following:

- Some of the caregivers of preschool children did not lock poisonous substances which is an unsafe indoor practice.



- Regarding cleaning products, the kitchen and bathroom window sills were used to store cleaning and washing products as out of reach areas for preschool children without taking into consideration the age and developmental skills of the preschool child to explore and reach such heights.
- Some caregivers further indicated that they use kitchen floors, top of the table, buckets with ordinary lids as cleaning products' storage.
- Chemicals such as paraffin or kerosene were kept in various places on top and behind kitchen cupboards, behind the door, on the floor, under the table and on top of the fridge.
- Some of the caregivers store insecticides and pesticides in bedrooms, wardrobes without locking.
- Insecticides are unsafely poured behind cupboards in concealed areas and left for a day or two before being removed.
- This caregiver also mixed pesticides with food and left it overnight.

This practice is an elevated risk for unintentional poisoning among preschool children.

4.5.1.3. Storage of poisonous substances

Safe practices of storage of poisonous substances:

- Some caregivers store paraffin outdoor in shacks and garages.
- A drum is use inside the house for storage of paraffin (kerosene) which stays locked.
- Few caregivers do not use paraffin.

Unsafe practices of storage of poisonous substances:

- Some of the caregivers of Elias Motsoaledi Sub-district in Limpopo Province use unsuitable container such as empty 2litre cold drink bottles, previous milk containers for buying and storing paraffin (kerosene).
- These empty cool drink bottles are also used for cold drinking water storage.



- Some caregivers store poisonous substances on top of kitchen cupboard, behind kitchen cupboard, behind the door on the floor, under the table on the floor, top of the fridge.
- Caregivers do not use child resistant lids.

Majority of the caregivers shows lack of knowledge, negligence and ignorance.

4.5.1.4. Knowledge about indoor safety practices

Safe practices are presented related to knowledge of indoor safety:

- Few caregivers knew about indoor safety practices regarding unintentional poisoning of preschool children by keeping everything that is harmful out of reach of children.
- They used lockable storage rooms, iron boxes and cupboards.

Unsafe practices are presented related to knowledge of indoor safety:

- The caregivers had lack of knowledge regarding keeping their preschool children safe indoors.
- Some of the caregivers did not have any idea what can protect or make preschool children safe.
- Only five caregivers knew the ambulance emergency number in case of any emergency regarding unintentional poisoning of a preschool child.

4.5.1.5. Acknowledgement of own indoor safety practice

- Some caregivers reveals knowledge of indoor safety practices, but they choose to practice unsafe activities, by being negligent and reluctant to practice safety regarding unintentional poisoning amongst preschool children.

4.5.2. Outdoor safety practices



4.5.2.1. Knowledge of poisonous plants

Safe practices regarding knowledge of poisonous plants:

- Few of these caregivers were well informed regarding some poisonous plants, such as trees and flowers that could unintentionally poison their preschool children.

Unsafe practices regarding knowledge of poisonous plants:

- However, many of the caregivers were not well informed about poisonous trees and flowers in the environment that might unintentional poisoned preschool children.

4.5.2.2. Knowledge regarding outside environment hazards

Safe practices regarding knowledge of outside environment hazards:

- Few of these caregivers knew other environmental hazards that could harm their preschool children.
- They store and lock oils, and petrol in garages, shacks and iron boxes to practice outdoor safety regarding unintentional poisoning of preschool children.

Unsafe practices regarding knowledge of outside environment hazards:

- Some caregiver store petrol, brake fluid, diesel, oil stays in some bottles and behind the vehicle in the garage.

This reveals that some caregivers with the outdoor safety practices are unable to recognise environmental hazards on unintentional poisoning:

- They revealed that they had no idea of anything that could unintentionally poison a preschool child.

4.5.3. Consideration of child's developmental skill

Safe practices with regarding consideration of child's developmental skill:



Regarding safe practices considering the developmental skill of the child no comment verbal or non-verbal reveal by caregivers.

Unsafe practices with regarding consideration of child's developmental skill:

- Some caregivers did not practice safety indoors and outdoors with the opinion that their preschool children would not unintentionally poison themselves.
- Few caregivers perceived that their preschool children's developmental skills can protect them from unintentional poisoning.
- Some caregivers underestimate the children's abilities and curiosity to explore which might lead to unintentional poisoning.

4.5.3.2. Education of preschool children about safety

Safe practices regarding education of preschool children about safety:

- A few caregivers in these findings revealed that for indoor and outdoor safety practices, they see teaching as crucial for protecting their preschool children from unintentional poisoning.
- They inform the preschool children not to touch unknown containers.

Unsafe practices regarding education of preschool children about safety:

- Some caregivers change labels indicating that the container has poison inside with the perception that preschool child will see, safety is not practiced in this regard as preschool children are unable to read.
- Furthermore, developmental skills of the children allow them to explore their environment but most of the caregivers indicated that they did not teach their preschool children any indoor and outdoor safety practices.



4.5.3.3. Supervision of preschool children regarding unintentional poisoning

Safe practices in the supervision of preschool children regarding unintentional poisoning:

- Findings revealed that a few caregivers perceive supervision as a strategy for indoor and outdoor safety practices regarding unintentional poisoning of preschool children.

Unsafe practices in the supervision of preschool children regarding unintentional poisoning:

- However, many of the caregivers in this study did not recognise supervision as a strategy for indoor and outdoor safety practices.

4.6. RECOMMENDATIONS

This section outlines the recommendations which are based on the findings. Recommendations are drawn up and discussed regarding general recommendations for indoor and outdoor safety practices, health education, and further research.

4.6.1. Recommendation for safe indoor practices

- Lock top and bottom cupboards, wardrobes, drawers and fridges where medication is stored.
- Avoid putting medication in bags, on top of the television and in breadbins.
- Lock and store cleaning products, insecticides, pesticides and chemicals out of reach of preschool children.
- Place everything poisonous out of reach of preschool children with consideration of their age and developmental skills.
- Use correct containers with child resistant lids for paraffin or kerosene storage.
- Supervise preschool children closely, indoors.
- Never expose preschool children to poisonous substances.



- Know the ambulance and poison centre numbers in case of unintentional poisoning.

4.6.2. Recommendation for safe outdoor practices

- Remove poisonous trees and flowers in the garden and encourage others not to plant poisonous trees and flowers.
- Raise awareness campaigns about poisonous plants to the community in liaison with the environmental health department to make caregivers aware of some poisonous trees and flowers at homes and in the community that might unintentionally poisoned preschool children.
- Lock areas like shacks and garages where poisonous substances such as petrol, kerosene or paraffin and diesel are stored.
- All retailers should be encouraged to use child-resistant lids when selling paraffin and other poisonous substances by the enforcement of provincial laws.
- The sub-district if it can liaise with plastic container companies to manufacture empty containers with child-resistant lids which can be utilised by caregivers for the storage of poisonous substances.

4.6.3. Recommendations regarding education

- Develop material for distribution regarding safe indoor and outdoor practices.

The principle of learning in the adult situation must be taken into consideration. For those who cannot read, pictures can be used for better understanding.

The following recommendations are to empower caregivers to improve their safety practices regarding unintentional poisoning in preschool children.

⇒ **Training**

- Training of caregivers using Zulu and Sepedi regarding indoor and outdoor safety practices in Elias Motsoaledi Sub-district, Limpopo Province should be outlined in posters.
- Training the caregivers about emergency care if a preschool child is unintentionally poisoned. This includes knowing the ambulance number and poison centre number and first aid intervention while waiting for help. The developed posters should have attach information with an ambulance number and poisoning centre number. (see Annexure H and I attached as an example).

⇒ **Poster development**

Posters and pamphlets should be developed and displayed in health care centres and the pamphlets should be given to parents on their visits (view Annexure H and I).The following features should be included in the posters and leaflets:

- They should be reader-friendly with simple language and attractive, colourful pictures.
- They should outline the background of poisoning.
- They should also show pictures of unsafe indoor practices.
- Pictures should show what safety indoor practices are.
- They should show poisonous plants that need not be planted in the yard.

⇒ **Health facilities**

- The researcher recommends that all health facilities in Elias Motsoaledi Sub-district in Limpopo Province should be strengthened to address and include safety practices regarding unintentional poisoning amongst preschool children in their health education programmes. This would assist in fast-tracking the implementation of safety practices by caregivers.

- The usage of radio slots in different facilities is also a recommendation to promote safety practices by caregivers regarding unintentional poisoning amongst preschool children in Elias Motsoaledi Sub-district in Limpopo Province.
- Further recommendations are that when preschool children are admitted with unintentional poisoning in health facilities, counselling and health education should be given to caregivers.
- The researcher will present these recommendations to the different stakeholders by distributing pamphlets and posters, and provide feedback to the researched clinics and planning an awareness campaign, in collaboration with these clinics.

4.6.4. Recommendations for formulation of the new guidelines for safe indoor and outdoor practices

The results of the findings will be presented to the Department of Health in Limpopo Province as well as the National Health Research Department to formulate new guidelines or reviewing any existing guidelines. Guidelines should include:

- The effective use of child-resistant caps in poisonous substances.
- The selling of pesticides, insecticides, paraffin and other poisonous substances, as well as over the counter medications that can help the reduction of unintentional poisoning amongst preschool children.
- The development and implementation of a policy for the sub-district of Elias Motsoaledi will be recommended.

4.6.5. Recommendations for research

- Further research is needed where house visitation regarding safety practices would be observed.

- The availability of programmes regarding safety practices and its effectiveness are needed.
- Further research on what makes caregivers not to practice and ignore safety regarding unintentional poisoning among preschool children is also vital.
- Further research is needed on how educating preschool children can protect them from unintentional poisoning.

4.7. LIMITATIONS OF THE STUDY

The following limitations were identified:

The study involved a rural population of Elias Motsoaledi Sub-district who receive their health services in four clinics. The results can only be generalised to Elias Motsoaledi Sub-district as it was the only district where the population were purposively sampled for the study. The findings and recommendations cannot be transferred to national, or the whole of the Limpopo Province as the gap of unintentional poisoning among preschool children was identified among the villages of Elias Motsoaledi Sub-district in Limpopo Province, but the study can be repeated in other settings to determine transferability.

4.8. DISSEMINATION OF THE FINDINGS

The following are suggestions of possible methods to communicate the findings of this study:

- Publication of an article in an accredited journal.
- Presenting the findings at district, provincial, national and international level in symposiums and child seminars.
- Education of caregivers at Elias Motsoaledi Sub-district in Limpopo Province where the content would be safe indoor and outdoor practices versus unsafe indoor practices.
- Pamphlets for caregivers of Elias Motsoaledi Sub-district in Limpopo Province.



- Posters in primary health care clinics and hospitals.

4.9. CONCLUSION

Safety practices of caregivers regarding unintentional poisoning is critically essential in the prevention of morbidity and mortality amongst preschool children. This study aimed to explore and describe caregiver safety practices regarding unintentional poisoning in preschool children in the Elias Motsoaledi Sub-district, Limpopo Province.

The findings and recommendations answered the research question. It was found that in the context of this study, caregivers' safety practices regarding unintentional poisoning of preschool children had some challenges. The study was fruitful as it revealed essential findings regarding safety practices and educational information that could be developed. Recommendations of the findings were made regarding health centres, caregivers, and suggestions for guideline formulations or the reviewing of current guidelines.



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ANNEXURE A: Focus group - demographic questionnaire

Number of questionnaire:		Setting:	
Section A: Demographic information			
1	Relationship of the caregiver with the preschool child		
	Parents	1	
	Grandparents	2	
	Siblings	3	
	Neighbour	4	
	Other, namely	5	
2	Level of education of the caregiver		
	Never attended school	1	
	Grade 0-Grade 7	2	
	Grade 8-Grade 10	3	
	Grade 12	4	
	Tertiary level	5	
3	Information pertaining the number of preschool children in the household		
	How many preschool children are there in the household?	1	
4	Ages of preschool children in the household		
	Younger than 1 year of age	1	
	Between 1 and 2 years	2	
	Between 2 and 3 years	3	
	Between 3 and 4 years	4	
	Between 4 and 5 years	5	
	Between 5 and 6 years	6	
4	Gender of the preschool children in the household		
	Male	1	
	Female	2	
5	Has a child from your household ever been admitted to hospital for poisoning ingestion?		
	Yes	1	
	No	2	
	If yes, how many times?	3	



ANNEXURE B: Focus group – interview guide

TITLE OF THE STUDY

Caregivers' safety practices regarding unintentional poisoning amongst pre-school children in the Elias Motsoaledi sub-district, Limpopo Province

The length of the focus group interview will be 45-90 minutes.

The following main question will be utilize to guide the group interview

What are you doing at home to make sure that your small child(ren) will not eat or drink anything that is harmful?"

- Base on the abovementioned question the following research sub-questions will be utilize as a guide:
 - How are you storing medication?
 - And solutions such as paraffin, Handy Andy and Jik?
 - What are you doing with poison for ants or flies or any other poison?
 - Do you have other things in the house that can be harmful to your child(ren)?
 - Are there anything outside the house that can be harmful? What are you doing to make sure that they do not eat or drink it?
 - Do you have any ideas about what can be done to make it safe for small children?



ANNEXURE C: Informed consent form

INFORMATION LEAFLET AND INFORMED CONSENT FOR NON-CLINICAL OPERATIONAL RESEARCH

TITLE OF THE STUDY: CAREGIVERS' SAFETY PRACTICES REGARDING UNINTENTIONAL POISONING AMONGST PRESCHOOL CHILDREN IN THE ELIAS MOTSOLEDI SUB-DISTRICT LIMPOPO.

Dear Participant

Introduction

We invite you to participate in a research study. This leaflet has information about the study. Before you agree to take part you should fully understand what is involved. If you have any question that this leaflet does not fully explain, please do not hesitate to ask the researcher.

THE NATURE AND PURPOSE OF THE STUDY

The overall aim of the study is to explore safety practices of caregivers regarding unintentional poisoning in pre-school children in order to suggest prevention strategies.

3. EXPLANATION OF PROCEDURES TO BE FOLLOWED

In this study you will be invited to participate in a focus group of 6-12 caregivers of children under the age of 6 years. It will be an open discussion about what you are doing at home to make sure that your small child(ren) do not eat or drink anything that might be harmful to them. The conversation will be tape recorded to make it possible for me as the researcher to listen again to it afterwards and to describe it as part of the research study.

4. RISK AND DISCOMFORT INVOLVED

"I do not foresee any risk during participation in the study. The only discomfort might be the time that you sacrifice to participate, which will be approximately 45 to 90 minutes of your clinic day. If you experience any other discomfort during your participation, please inform me about it. If you feel uncomfortable with some of the questions you do not need to answer them if you don't want to". I will provide the children with some candy to keep them busy while we are talking".

5. POSSIBLE BENEFITS OF THIS STUDY



Participation in this study will give you an opportunity to share your knowledge in safety practices with regard to unintentional poisoning by pre-schoolers children in Elias Motsoaledi sub-district in Limpopo province. You will not be paid for your contribution, but you and your child will receive some refreshments. The information that you contribute will assist us with recommendations to prevent unintentional poisoning in pre-school children and to inform other caregivers on how to make their homes safer for the children.

6. WHAT ARE YOUR RIGHTS AS A PARTICIPANT?

Your participation in this research is entirely voluntary - it is your choice to participate or not. If you wish not to participate you do not have to do anything in response to the request. The choice that you make will have no effect on your status as a client, on consultation and assessment, or any other way. If you agreed to participate in the study you can withdraw at any time.

7. HAS THE STUDY RECIVED ETHICAL APPROVAL?

The proposal will be reviewed and approved by the Research Ethics Committee of the Faculty of Health Sciences of the University of Pretoria at Tswelopele Building level 4-59 Prinshof Campus, Phone (012-356 3085) and the Ethics Committee of Department of Health of Limpopo Province Phone (015-2936650). Copies of approval letters are available if you wish to view these approvals.

8. INFORMATION OF CONTACT PERSONS

If you have any questions about the study, after discussion.

You may contact any of the following persons at any stage.

- The researchers: Jane Maseko 078 012 9379.
- The supervisor: Seugnette Rossouw at 072 110 8630.
- The co-supervisor: Carin Maree at 083 286 6696
- Research Ethics Committee: Mrs M Smith at (012) 354 1330

9. COMPENSATION

To participate in the research is voluntary, no compensation will be given.



10. CONFIDENTIALITY

All information that you give will be kept confidential. Once we have analysed the information no one would be able to identify you. Research reports and articles will be written for scientific journals but will not include any information that may identify you.

CONSENT TO PARTICIPATE IN THIS STUDY

I confirm that the researcher has explained to me the nature, process, risks, discomforts and benefit of the study. I have also received, read and understood the above written information (Participation Information Leaflet) regarding the study. I am aware that the results of the study, including personal details, will be anonymously processed into research reports. I consent voluntarily to participate in this research. I have been given an opportunity to ask questions and have no objection to participate in this study. I understand that there is no penalty should I wish to discontinue with the study and my withdrawal will have no bearing on my status as a client of the local clinic. I am aware that my knowledge in safety practices regarding unintentional poisoning of pre-school children will be explored during the discussion interview. Only the researchers and the supervisors will have access to this material.

I have received a signed copy of this informed consent agreement.

Participant's name (Please print)

Participant's signature.....Date.....

Investigator's name (Please print)

Investigator's signatureDate.....

Witness's Name (Please print)

Witness's signatureDate.....



VERBAL INFORMED CONSENT

I, the undersigned, have read and have fully explained the participant information leaflet, which explains the nature, process, risks, discomforts and benefits of the study to the participant whom I have asked to participate in the study. The participant indicates that s/he understands that the results of the study, including personal details regarding the interview will be anonymously processed into a research report. The participant indicates that s/he has had time to ask questions and has no objection to participate in the consensus meeting. She/he understands that there is no penalty should s/he wish to discontinue with the study and his/her withdrawal will not affect his/her as a client of the local clinic. I hereby certify that the client has agreed to participate in this study.

Participant's Name(Please print)

Participant signatureDate.....

Witness name(Please print)

Witness SignatureDate.....



ANNEXURE: D DECLARATION OF A PROFESSIONAL EDITOR



5 Gwai Place; 10 Kudu Heights
Faerie Glen
Pretoria
0081

Email: pholilemaseko@yahoo.com
Cell: 076 103 4817

20 November 2017

DECLARATION OF PROFESSIONAL EDIT

I declare that I have edited and proofread the MCur Dissertation entitled: **CAREGIVERS' SAFETY PRACTICES REGARDING UNINTENTIONAL POISONING AMONGST PRESCHOOL CHILDREN IN THE ELIAS MOTSOALEDI SUB-DISTRICT OF LIMPOPO PROVINCE** by Ms Busisiwe Jane Maseko.

My involvement was restricted to language editing, proofreading, sentence structure, sentence completeness, sentence rewriting, consistency, referencing style, editing of headings and captions. I did not do structural re-writing of the content. Kindly note that the manuscript was formatted as per agreement with the client. No responsibility is taken for any occurrences of plagiarism, which may not be obvious to the editor. The client is responsible for the quality and accuracy of the final submission.

Sincerely,

Pholile Zengele

Associate Member, Professional Editors Group



ANNEXURE:E ETHICS LETTER APPROVAL

The Research Ethics Committee, Faculty Health Sciences, University of Pretoria complies with ICH-GCP guidelines and has US Federal wide Assurance.

- FWA 00002567, Approved dd 22 May 2002 and Expires 20 Oct 2016.
- IRB 0000 2235 IORG0001762 Approved dd 22/04/2014 and Expires 22/04/2017.



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Health Sciences Research Ethics Committee

21/02/2017

Approval Certificate New Application

Ethics Reference No.: 308/2016

Title: CAREGIVERS' SAFETY PRACTICES REGARDING UNINTENTIONAL POISONING AMONGST PRE-SCHOOL CHILDREN IN THE ELIAS MOTSOALEDI SUB-DISTRICT OF LIMPOPO PROVINCE

Dear Miss Busisiwe BJ Maseko

The **New Application** as supported by documents specified in your cover letter dated 19/08/2016 for your research received on the 19/08/2016, was approved by the Faculty of Health Sciences Research Ethics Committee on its quorate meeting of 21/02/2017.

Approval of the following Clinics and Province have been obtained:

1. Limpopo Province approval
2. Philadelphia Mobile Clinic
3. Elandsdoring Clinic
4. Philadelphia Mobile (Homeland)
5. Philadelphia gateway clinic

Please note the following about your ethics approval:

- Ethics Approval is valid for 1 year
- Please remember to use your protocol number (308/2016) on any documents or correspondence with the Research Ethics Committee regarding your research.
- Please note that the Research Ethics Committee may ask further questions, seek additional information, require further modification, or monitor the conduct of your research.

Ethics approval is subject to the following:

- The ethics approval is conditional on the receipt of **6 monthly written Progress Reports**, and
- The ethics approval is conditional on the research being conducted as stipulated by the details of all documents submitted to the Committee. In the event that a further need arises to change who the investigators are, the methods or any other aspect, such changes must be submitted as an Amendment for approval by the Committee.

We wish you the best with your research.

Yours sincerely

Dr R Sommers; MBChB; MMed (Int); MPharm, PhD
Deputy Chairperson of the Faculty of Health Sciences Research Ethics Committee, University of Pretoria

The Faculty of Health Sciences Research Ethics Committee complies with the SA National Act 61 of 2003 as it pertains to health research and the United States Code of Federal Regulations Title 45 and 46. This committee abides by the ethical norms and principles for research, established by the Declaration of Helsinki, the South African Medical Research Council Guidelines as well as the Guidelines for Ethical Research: Principles Structures and Processes, Second Edition 2015 (Department of Health).

☎ 012 356 3084 ✉ deepika.behari@up.ac.za 🌐 <http://www.up.ac.za/healthethics>
✉ Private Bag X323, Arcadia, 0007 - Tswelopele Building, Level 4, Room 60, Gezina, Pretoria



LIMPOPO

PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH

► **SEKHUKHUNE DISTRICT**

Elias Mostoaledi Sub-District

Elandsdoorn, Gateway, Mobile clinics

RESEARCH: CAREGIVER SAFETY PRACTICES REGARDING UNINTENTIONAL POISONING AMONGST PRE-SCHOOL CHILDREN IN ELIAS MOTSOALEDI SUB-DISTRICT IN LIMPOPO PROVINCE.

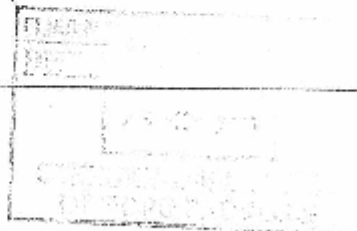
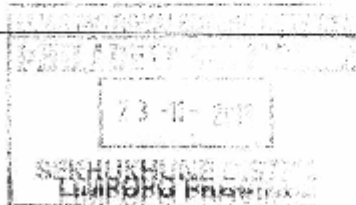
MCUR STUDENT NO: 21221074 .Protocol : 308/2016

Collection of data by interviewing caregivers with children younger than six years in the (1) Elandsdoorn clinic, (2) Gateway clinic and (3) two mobile clinics in the Elias Motsoaledi sub- district in Limpopo Province, based on the above stated topic.

CLINIC'S NAME TEL/CELL: *Philadelphia Mobile*

Approved/not-approved

Clinic manager _____ Sign _____ Date *23.11.2016*





LIMPOPO

PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH

► **SEKHUKHUNE DISTRICT**

Elias Motsaedi Sub-District
Elandsdoorn, Gateway, Mobile clinics

RESEARCH: CAREGIVER SAFETY PRACTICES REGARDING UNINTENTIONAL POISONING AMONGST PRE-SCHOOL CHILDREN IN ELIAS MOTSOAEDI SUB-DISTRICT IN LIMPOPO PROVINCE.

MCUR STUDENT NO: 21221074 .Protocol : 308/2016

Collection of data by interviewing caregivers with children younger than six years in the (1) Elandsdoorn clinic, (2) Gateway clinic and (3) two mobile clinics in the Elias Mtsaoladi sub- district in Limpopo Province, based on the above stated topic.

CLINIC'S NAME TEL/CELL: Philadelphia Gateway Clinic

Approved/not approved

Clinic manager: _____ Sign: _____ Date: 09/02/2017





LIMPOPO

PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH

► **SEKHUKHUNE DISTRICT**

Elias Motosaledi Sub-District
Elandsdoorn, Gateway, Mobile clinics

RESEARCH: CAREGIVER SAFETY PRACTICES REGARDING UNINTENTIONAL POISONING AMONGST PRE-SCHOOL CHILDREN IN ELIAS MOTSOALEDI SUB-DISTRICT IN LIMPOPO PROVINCE.

MCUR STUDENT NO: 21221074 .Protocol : 308/2016

Collection of data by interviewing caregivers with children younger than six years in the (1) Elandsdoorn clinic, (2) Gateway clinic and (3) two mobile clinics in the Elias Motosaledi sub- district in Limpopo Province, based on the above stated topic.

CLINIC'S NAME TEL/CELL: *Philadelpia mobile*

Approved/not approved

Clinic manager *[Signature]* Sign _____ Date *17-02-17*

ELIAS MOTSOALEDI PHD SERVICE
PHILADELPHIA MOBILE
17-02-2017
SEKHUKHUNE DISTRICT
LIMPOPO PROVINCE

ELIAS MOTSOALEDI PHD SERVICE
PHILADELPHIA MOBILE
17-02-2017
SEKHUKHUNE DISTRICT
LIMPOPO PROVINCE



ANNEXURE H: Poster for prevention of unintentional poisoning



ANNEXURE I: PAMPHLET FOR PREVENTION OF UNINTENTIONAL POISONING



ANNEXURE J: DRAFT OF DATA FROM QUESTIONNAIRE

Questionnaire number	Number of preschool children in the household	Ages of the preschool children in the house hold Use the codes on the questionnaire to indicate the number	Gender of the preschool children in the household
P1	4	1-2(1), 2-3(1), 3-4(1), 4-5(1)	M (2), F (2).
P2	1	3-4(1)	F (1).
P3	1	1-2(1)	F (1).
P4	1	3-4(1)	M (1).
P5	2	2-3(1), 3-4(1)	M (1), F (1).
P6	3	Under 1yr (1), 2-3(1), 5-6(1)	M (3).
P7	1	Under 1yr (1)	F(1).
P8	2	1-2(1),4-5(1)	M (2).
P9	2	1-2(2)	M (2).
P10	1	1-2(1)	M (1).
P11	1	1-2(1)	M (1).
P12	2	3-4 (1), 5-6(1)	M (1), F (1).
P13	4	Under 1yr (1), 1-2(1), 2-3(1), 5-6(1)	M (3), F (1).
P14	1	Under 1yr (1)	M (1).
P15	1	3-4 (1)	M (1).
P16	4	Under 1yr (2), 2-3(1), 5-6(1)	M (3), F (1).
P17	1	1-2(1)	M (1).
P18	2	2-3(1), 3-4(1)	M (1), F (1).
P19	2	Under 1yr (1), 5-6(1)	F (2).
P20	2	1-2(1), 5-6(1)	M (2).
P21	1	Under 1yr (1)	M (1).
P22	4	Under 1yr (1), 1-2(1), 4-5(1), 5-6(1)	M (3), F (1).
P23	2	Under 1yr (1), 5-6(1)	F (2).
P24	3	5-6(3)	M (3).
P25	2	1-2(2)	M (2).
P26	1	Under 1yr (1)	M (1).
P27	2	Under 1yr (1), 5-6(1)	F (2).
P28	2	1-2(1), 4-5(1)	M (1), F (1).
P29	2	Under 1yr (1), 4-5(1)	F (2).
P30	2	Under 1yr (1), 5-6(1)	F (2).
P31	1	5-6(1)	M (1).
P32	1	2-3(1)	M (1)
P33	3	Under 1yr (1), 1-2(1), 2-3(1)	F (3).
P34	1	2-3(1)	F (1).
P35	1	5-6(1)	F (1).
P36	1	2-3(1)	M (1).



P37	2	Under 1yr (1), 4-5(1)	M (1), F (1).
P38	6	Under 1yr (3), 2-3(1), 4-5(1), 5-6(1)	M (3), F (3).
P39	1	2-3(1)	M (1)
P40	1	2-3(1)	F (1).
P41	2	5-6(2)	M (2).
P42	2	4-5(2)	M (1), F (1).
P43	2	2-3(1), 5-6 (1)	F (2).
P44	4	Under 1yr (2), 3-4 (2)	M (2), F (2)
P45	4	Under 1yr (1), 1-2(1), 2-3 (1), 3-4 (1)	M (2), F (2)
P46	1	1-2 (1)	F (1).
P47	1	3-4 (1)	F (1).
P48	5	5-6 (5)	M (2), F (3).
P49	1	5-6 (1)	M (1).
P50	1	3-4 (1)	F (1).
P51	4	4-5 (4)	M (4).
P52	1	2-3 (1)	F (1).
P53	1	5-6 (1)	M (1).
P54	1	2-3 (1)	F (1).
P55	3	1-2 (3)	M (3).
P56	1	4-5 (1)	M (1).
P57	1	5-6 (1)	F (1).
Total	112	112	112

ANNEXURE K: EXTRACTION OF RAW DATA

ANNEXURE K: EXTRACTION OF RAW DATA

Focus group main question *“What are you doing at home to make sure that your small child(ren) will not eat or drink anything that is harmful?” explained again by the investigator in North Sotho , Zulu and English for the participants understanding. Followed by probing questions.*

Investigator: *“What are you doing at home to make sure that your small child(ren) will not eat or drink anything that is harmful?”*

P1: *“Every time when I used paraffin I make sure that I use a container with a lid I close it tightly (pause)...but my carelessness is that I put the bottle on top of the cupboard”.* *“Investigator: what do you use to buy paraffin?”*

“I use a previous used 5litre milk container when I finish I close it and put it on top of the cupboard so that the child cannot reach”

P2: *“We buy paraffin using a 2litre cool drink bottle of which children know that cool drink is for drinking this is the mistake we do at home”*

Investigator: *“Where does it stay?”*

P2: *(Laughing) eh... “We put it on the floor behind the door”*

Investigator: *“You don’t hide it?”*

P2: *“No we don’t hide” (Laughter)*

P3: *“We use organic phosphate for killing rats put it in the food so that rats can eat”*

Investigator: *“Where do you put the food?”*

P3: *“Inside the house where there are rats we put it during the night and we remove it during the day”*

P4: *“We buy paraffin with 2litre cool drink bottle to create floor polish then I put it behind the cupboard as our cupboard has a passage (demonstrating with hands) where children cannot reach”*

P5: *“Things that are harmful like Jik™ I take it and use it and after I put on top the cupboard so that children cannot reach it as they are still young”*



P6: "Poisoning for killing rats we poor it next to the cupboard this is our problem we don't put it far as we are supposed to put it far"

Investigator: "How are you storing medication?"

P1: "I put medication in the wardrobe drawer but it can open because as they open it but I tell them that, " 'this is mama's pills don't touch is lethal" (laughter).

P2: "When my mother came from the clinic she does not hide her medication she put them" near the Television."

P3: "Me medication like of this one I am breastfeeding I put inside the bucket in time I want to give her medication I take it and give her then I put it on the wardrobe in a drawer or on the floor inside the wardrobe because I know they are sweat they can drink it" hmm.....

P4: "Me 'My mother pills when she come from the clinic we put it in a plastic bag and tie it and put it in a cupboard only me, her and my other older siblings knows where they are the are the younger ones don't know"

Investigator: "Does she send the pre-school to fetch them?"

"Hmm.....(shaking the head) it is me and the other sibling who fetch the pills for the her"

Investigator: "How old are your siblings?"

P4: "Over fourteen years"

P4: "Then for this young one I put them on top drawer and I am sure the young ones can't reach"

P5: "I bought a toiletry bag I put all the medication there and zip it (looking sideways) but my aunt put her medication inside a breadbin" (Laughter).

P6: "Mine they are inside the bucket if you want to use it you take it out when you finish you close the lid"

Investigator: how do you solutions such as paraffin, Handy Andy™ and Jik™?

P1: "I don't use paraffin"

P2: "I don't use paraffin"

P3: "Cleaning solutions after use I store on the floor under the table in the kitchen"

P4: "There is a grocery cupboard at the bottom of the cupboard we put handy and floor polish Jik™ and everything that we think is dangerous then we lock"



Investigator: "What about those in use?"

"We take it out when the child is still outside we use it then put it back and lock"

P5: "We put it inside the bucket and we close it".

Investigator: "Where does the bucket stay?"

"On top of the cupboard in the kitchen"

P6: "We put cleaning solution under the table on the floor"

ANNEXURE L: EXAMPLES OF ANALYSED DATA IN CLUSTERS

CLUSTERS	SUB- THEME	THEME
<p>Don't keep pills in the house. Pills are not use in the house.</p> <p>Pills are not use in the house.</p> <p>Pills are not used in the house. Pills are not used in the house Pill not used in the house. Pills can't reach safe place. In the wardrobe and lock.</p>	<p>Access to medication by preschool children.</p>	<p>Indoor safety practices.</p>
<p>Don't hide medication. Medication near television. Pills In the wardrobe in a drawer. Pill toiletry bag. Medication inside a breadbin Medication inside the bucket closes the lid.' Pills are put in the wardrobe but don't lock. Pills inside the bucket. Pills put it on the wardrobe in a drawer. Pills are stored in a small bag.</p>	<p>Access to medication by preschool children.</p>	
<p>Cleaning product window sill. Cleaning product stored in the floor. Cleaning product is put in the window sill. Harmful chemicals are put on top of the table Harmful chemicals are put on the window sill. Harmful chemicals are put on the window sill. Store roll-ons and soap in the cupboard and top of the dressing table'. Sunlight soap put on the window sills. Cleaning product doesn't lock.</p>	<p>Access of preschool children to poisonous substances, such as harmful chemicals, cleaning products and insecticides.</p>	
<p>Use a 2 litre container. 2l container of cool drink. 5litre milk container. Buy paraffin using a 2litre cool drink.</p>	<p>Storage of poisonous substances.</p>	



<p>Use a 2 litre container.</p> <p>2l container of cool drink.</p> <p>5litre milk container.</p> <p>Buy paraffin using a 2litre cool drink.</p> <p>Buy paraffin with 2litre cool drink bottle.</p> <p>Use a 2litre cool drink bottle.</p>	<p>Storage of poisonous substances.</p>	
<p>No harm is identified out of the house.</p> <p>No knowledge about any other harmful substances.</p> <p>No knowledge about poisonous substances outside the house.</p> <p>No idea.</p> <p>Shaking head.</p> <p>Silence and other eh....hmm</p> <p>Don't think of anything.</p> <p>Don't think of anything</p> <p>No idea.</p>	<p>Knowledge of outside environment hazards.</p>	<p>Outdoor safety practices</p>



<p>Trees. Milky Flower. Flowers. Flowers. Don't think of anything. Don't think of anything. Don't think of anything. Don't think of anything. Not knowing. Silence.</p>	<p>Knowledge of poisonous plants.</p>	
<p>Don't usually touch guarded. Guarded not to eat. Need to supervise. Don't want child to her be quite. Checking what she is busy with. Playing with the child. Child friend. Wherever he goes you need to be there.</p>	<p>Supervision of preschool children.</p>	<p>Consideration of child's developmental skills</p>