

The perceptions of carers regarding non-adherence to immunisation schedule

By

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DECLARATION

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ABSTRACT

Child immunisation is an important intervention to reduce the number of childhood deaths. The Expanded Programme on Immunisation is therefore being utilised in South Africa to help prevent childhood deaths. Although immunisation coverage appears to be effective in South Africa, the Western Cape presents with a high default rate. The aim of the study was to explore the perceptions of carers regarding non-adherence to the immunisation schedule.

A qualitative research design, with a phenomenological approach was applied during this study. This study made use of a focused sample to select the carers of children, residing in the Eastern sub-district of Cape Town. The researcher made use of a semi-structured interview guideline that had been designed, based upon the objectives of the study. This interview guideline was validated by the supervisor and co-supervisor of the study. The Ethics committee at the faculty of Health Sciences, Stellenbosch University, granted their permission to perform this study, while the Western Cape's City Health also gave permission to do the planned interviews at the respective clinics. Written consent was obtained from each participant, before conducting the interview during this study.

Four themes emerged from the outcomes of this study with regards to the possible reasons for non-adherence to the recommended immunisation schedule by carers of babies, i.e. accessibility of clinics, parental knowledge, other responsibilities and staff attitudes. The findings of the study supported the framework of The Strategic Advisory Group of Experts, stating that vaccine hesitancy can be influenced by multiple factors, such as socio-cultural, environmental, health systems, or institutional.

The study concluded that the lack of healthcare education, crime and socio-economic factors strongly influenced non-adherence to the immunisation schedule. Further research is recommended to include the input from participants from a wider socio-economic background in the Western Cape.

Keywords: immunisation, non-adherence, carers.

OPSOMMING

Kinder-immunisasie is 'n belangrike ingryping om die aantal kindersterftes te verminder. Die Uitgebreide Program oor Immunisering word dus in Suid Afrika gebruik om kindersterftes te help voorkom. Alhoewel immunisasie-dekking in Suid Afrika effektief blyk te wees, presenteer die Wes-Kaap met 'n hoë terugvalsyfer. Die doel van hierdie studie was om die persepsies van versorgers met betrekking tot nie-nakoming aan die immuniseringsprogram te verken.

'n Kwalitatiewe navorsingsontwerp, met 'n fenomenologiese benadering was tydens hierdie studie toegepas. Die studie het van 'n doelgerigte steekproef gebruik gemaak om die versorgers van kinders, woonagtig in die Oostelike sub-distrik van Kaapstad, te selekteer. Die navorser het van 'n semi-gestruktureerde onderhoudsriglyn gebruik gemaak, wat na aanleiding van die doelstellings van die studie ontwerp is. Die onderhoudsriglyn is deur die promotor en mede-promotor van die studie gevalideer. Die Etiekkomitee van die fakulteit van Gesondheidswetenskappe, Universiteit van Stellenbosch, het vergunning vir die uitvoering van hierdie studie verleen, terwyl die Wes-Kaapse Stadsgesondheid toestemming vir die beplande onderhoude by die onderskeie klinieke gegee het. Skriftelike toestemming is van elke deelnemer, voor aanvangs van die onderhoud tydens die studie verkry.

Vier temas het vanuit die studie-uitkomstes, rakende die moontlike redes vir nie-nakoming aan die voorgestelde immuniseringskedule deur versorgers van babas voortgespruit, naamlik toeganklikheid van klinieke, kennis van ouers, ander verantwoordelikhede en die houding van personeel. Die bevindings van die studie het die Strategiese Adviserende Groep van Kundiges se raamwerk ondersteun, naamlik dat veelvuldige faktore die huiwering rakende entstof kan beïnvloed, byvoorbeeld sosio-kultureel, omgewings, gesondheidsisteme, of institusioneel.

Die studie het tot die slotsom gekom dat die gebrek aan gesondheidsorgopvoeding, geweld en sosio-ekonomiese faktore die nie-nakoming aan die immuniseringsprogram sterk beïnvloed het. Verdere navorsing word aanbeveel ten einde die insette van deelnemers vanaf 'n breër sosio-ekonomiese agtergrond in die Wes-Kaap te bekom.

Sleutelwoorde: immunisasie, nie-nakoming, versorgers.

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LIST OF ABBREVIATIONS

COMMIC:	Committee on Morbidity and Mortality
EPI:	Expanded Programme on Immunisation
IMR:	Infant Mortality Rate
MDGR4:	Millennium Developmental Goal 4
MMR:	Measles, Mumps and Rubella
SACSA:	Situation Analyses of Children in South Africa
SAGE:	Strategic Advisory Group of Experts
U5MR:	Under 5 Mortality Rate
WHO:	World Health Organization

CHAPTER ONE

SCIENTIFIC FOUNDATION OF THE STUDY

1.1 INTRODUCTION

Child immunisation has been identified as an important intervention to prevent and decrease childhood mortality rates (Mathieson & Brearley, 2012:1). Immunisation aims at preventing diseases from occurring by introducing agents into the body for anti-body production (Hattingh, Dreyer & Roos, 2006:157). Immunisation is also a cost-effective method for preventing child deaths (Abdulraheem, Onajole, Jimoh & Oladipo, 2011:195).

South Africa utilises the Expanded programme on immunisation (EPI) to prevent communicable childhood diseases (UNICEF, 2009:62). According to the Situation Analyses of Children in South Africa (SACSA), the EPI attempts to reach a target coverage rate of 90% in the first year of human lives for all vaccines (UNICEF, 2009:62). In order to achieve a sustained control of vaccine preventable diseases, the immunisation coverage rate should be close to 95% (Abdulraheem *et al.*, 2011:195).

Immunisation coverage is described as excellent in South Africa (McKerrow, 2011:84). Out of the nine provinces in South Africa, the Western Cape and Gauteng are performing the best with respect to the immunisation coverage levels being achieved, with lower infant mortality rates, compared to those in the other provinces (McKerrow, 2011:41).

However, although the Western Cape presents with a very high immunisation coverage rate, it is also the province with the highest default rate in immunisation schedules (McKerrow, 2011:41). The Western Cape reflects a 40% decrease in coverage rates from the EPI, following the first 9 months of immunisation of children (McKerrow, 2008:84). As a consequence, children are at risk of contracting fatal diseases, such as measles (McKerrow, 2008:84).

Immunisation has proven to be an effective tool in preventing children from dying young. Almost 2.5 million deaths were prevented in children younger than 5 years of age as a direct result of effective immunisation during the 21st century (Rainey, 2011:814). However, in

practice, children are getting diseases that could have been prevented through appropriate immunisation (McKerrow, 2011:84).

1.2 SIGNIFICANCE OF THE PROBLEM

The World Health Organisation (WHO) also confirmed that nearly 20% of child deaths had occurred in children younger than 5 years old (WHO, 2011:45). Infant mortality rates are seen as important indicators of the general health of a population (McKerrow, 2011:26). This can be linked to an increase in non-adherence to the immunisation schedule by carers.

1.3 RATIONALE

The under 5 mortality rate is an indicator that is used for monitoring the progress towards achieving the Millennium Developmental Goal 4 (MDG4), which monitors child mortality on a global level. The MDG4 target was to decrease the under 5 mortality rate (U5MR) by two-thirds globally, by 2015 (Mathieson & Brearley, 2012:2).

The MDG4 in South Africa aimed at achieving a target of 20 per 1 000 live births by 2015 (UNICEF, 2009:49). According to the statistics from 2008, South Africa had a rate of 58 per 1 000 live births (McKerrow, 2008:27). This indicated that the goal of the MDR4 had been in far reach. As mentioned above, child immunisations play a significant role in achieving these goals (McKerrow, 2008:27). The two leading causes of childhood deaths are pneumonia and diarrhoea (WHO, 2011:14). According to the WHO (2011:14), the impact on child deaths due to pneumococcal disease and rotavirus diarrhoea, accounted for 5% each of the U5MR, globally.

In South Africa, diarrhoea, pneumonia and influenza are reported as the two major causes of deaths in the age groups below 1 year (24.7%) and 1 - 4 years (20.1%) of age (UNICEF, 2009:50). Similar results are seen in Cape Town, with a high mortality rate, due to pneumonia and diarrhoea (Groenewalt, Bradshaw, Daniels et al., 2008:42). The rotavirus vaccine (against rotavirus diarrhoea) and the Prevenar vaccine (against pneumococcal pneumonia) have been found to be effective vaccines globally and were introduced to the EPI in 2008 (Groenewalt *et al.*, 2008:42). A significant decrease in the infant mortality rates (IMR), due to diarrhoea,

was noted in a study focusing on rotavirus diarrhoea and the efficacy of the vaccine (Cunliffe, Whittle, Ngwira, Todd, Bostock, Turner, Chimpeni, Victor, Steele, Bauckenooghe & Neuzil, 2012:42).

The most common reasons for non-adherence to immunisation schedules are related to the travel distances to immunisation facilities, the quality of care experienced at health facilities and the availability of vaccine services (Snow, 2009:16). In order for children to complete the full vaccine schedule, they need to attend all of the subsequent appointments. If carers have a bad experience, or receive a poor service, they might not return to the facility and miss future appointments. Poor attitudes from staff often complicate this, especially if parents are treated unfairly, or berated for missed opportunities, or for the loss of clinic cards (Snow, 2009:16).

As indicated above, non-adherence to immunisation schedules remains a serious problem and influences the child mortality rate. As a result, the researcher explored the factors that influence incomplete vaccine schedules.

1.4 PROBLEM STATEMENT

The problem statement articulates any matter of concern and provides the need for a research study through an argumentation (Polit & Beck, 2012:73). Therefore, a research problem usually outlines a lack of knowledge of, and/or intervention in nursing practice (Grove, Burns & Gray, 2013:73). The default rate of baby immunisations is still very high, specifically in the Western Cape. In addition, the Batho Pele principles clearly state that all citizens must have access to services they need, as required (Mcquiod-Mason & Dada, 2011:30). However, in practice, some babies do not complete their immunisation schedules, although health services are available. If babies are not fully immunised, they are not protected against preventable diseases, which usually leads to an increase in the child mortality rate. Through the proposed study, the researcher endeavoured to determine the perceptions of carers regarding non-adherence to the immunisation schedule.

1.5 RESEARCH QUESTION

What are the perceptions of carers regarding non-adherence to the immunisation schedule?

1.6 AIM

The aim of this study was to explore the perceptions of carers regarding non-adherence to the immunisation schedule.

1.7 OBJECTIVES

The research objectives were to:

- Explore carers' understanding of the immunisation schedule.
- Determine the challenges that carers experience in the context of non-adherence to the immunisation schedule.
- Determine possible solutions from the perspectives of carers.

1.8 RESEARCH METHODOLOGY

1.8.1 Research design

A qualitative design, with a descriptive methodology was applied to explore the perceptions of carers regarding non-adherence to the immunisation schedule.

1.8.2 Study setting

The Eastern sub-district of the Western Cape was identified as the research area and were carers of this area, who attend those clinics, included in the study.

1.8.3 Population and sampling

For this study, the population consisted of carers of children living in the Eastern sub-district of Cape Town.

Purposive sampling was applied during this study to choose carers who met the specific criteria.

1.8.3.1 Inclusion criteria

Carers of babies between the ages of 9 - 18 months, who defaulted on the recommended immunisation schedule. This age group experiences an increased risk of non-adherence to the immunisation schedule.

1.8.3.2 Exclusion criteria

Carers of babies with documented chronic illnesses, who require regular hospital visits.

1.8.4 Instrumentation

A semi-structured interview guideline was used, based upon the objectives of this study to guide the interviews.

1.8.5 Pilot Test

A pilot test was conducted with one participant and no pitfalls were identified during the preliminary test.

1.8.6 Measures to ensure trustworthiness

Trustworthiness was guaranteed through credibility, dependability, conformability and transferability (De Vos, Strydom, Fouche & Delpont, 2011:419).

1.8.6.1 Credibility

Credibility refers to whether the data being collected during the interview and the interpretation thereof were true (Polit & Beck, 2012:585).

Bracketing was done before the actual interviews commenced. The participants were made aware of the independent status of the researcher during the interviews to ensure that they were more open to respond to questions (Shenton, 2004:64). The researcher listened intently to interviews to ensure satisfactory data collection.

The researcher made use of probing questions to obtain ample information. The data that had been obtained through the interviews were comprehensively transcribed. After each interview, member checking was performed. Triangulation was done to validate the data.

Frequent de-briefing sessions were held between the researcher and supervisor. Peer scrutiny of the research study outcomes was performed by allowing peers, academics and colleagues to evaluate and give feedback over the duration of the research project (Shenton, 2004:64).

1.8.6.2 Transferability

Transferability is when the researcher determines whether the research findings could be transferred from one situation to another (De Vos *et al.*, 2011:420). Adequate background information was given to describe the context of this study to ensure comparisons. A theoretical framework was used to support transferability, as advised by De Vos *et al.* (2011:420). It was concluded that it may be possible to generalise the findings of this study to baby immunisation clinics in the broader Western Cape.

1.8.6.3 Dependability

De Vos *et al.* (2011:420) state that dependability is when the researcher must ensure that the research process is logical, audited and well documented. The data collection and analytical methods used in this study were validated by the researcher, the supervisor and an experienced qualitative researcher.

1.8.6.4 Confirmability

Grove *et al.* (2013:370) state that a confirmatory analysis is used by a researcher to prove the expectations related to the data obtained. According to these researchers, the data must be reliable, and a strong design must be used, as well as valid measurement methods (Grove *et al.*, 2013:375). Consequently, the researcher used field notes, memos, transcripts and the reflective reports of the researcher. An audit trail was provided for this research to enable observers to follow the research step-by-step. Clear and detailed methodological descriptions were given to allow for scrutiny (Shenton, 2004:72).

1.8.7 Data collection

Eight in-depth interviews were conducted to explore the perceptions of carers regarding non-adherence to immunisation schedules.

The research was conducted by the researcher self and her supervisor, who was the fieldworker during the research. The researcher made use of a voice recorder during the interviews. The interviews were conducted at government clinics in the Eastern sub-district of Cape Town.

1.8.8 Data analysis

The data was analysed and guided by the approach, as described by Miles and Huberman (2007:181). Interviews were described. Coding was done during the analyses and were comparisons identified.

1.9 ETHICAL CONSIDERATIONS

The rights of humans need to be protected when they are being used during a research study (Polit & Beck, 2012:150).

Each participant was given the opportunity to refuse in partaking in the research to ensure that when the data collection was done, that only those who really wished to participate were included in the study.

One needs to abide by four basic ethical principles of autonomy, beneficence, non-maleficence and justice when doing research (Pera & Van Tonder, 2011:331). In this study, the researcher adhered to these principles as follows:

1.9.1 The principle of autonomy

This principle explains that humans can control their own lives and can do with it as they wish (Grove *et al.*, 2013:164). During this research, the researcher allowed the participants to make their own decisions as to whether they wanted to continue to take part in the research, or to withdraw at any time. The researcher respected the decisions that the participants made during the research.

1.9.2 The principle of beneficence

The principle of beneficence aims at preventing any harm that the participant may experience during the research and to ensure that to do good to the participant is being maintained (Burns & Grove, 2011:118). Harm during research can be identified as physical, emotional, economic, or social (Burns & Grove, 2011:118). The researcher ensured that no emotional harm was done to the participant, by allowing her to stop the interview at any moment that the participant felt uncomfortable in answering a question. When it was observed that the participant did become emotional, the researcher re-assured the participant and continued the interview upon permission by the participant.

1.9.3 Confidentiality and anonymity

Information being given by participants must under no circumstances be disclosed, except for research purposes and must none of the data be linked to the participant that gave the information (Pera & Van Tonder, 2011:335). Consequently, no names of the participants and the facilities, where the research was conducted, were revealed. Pseudonyms were used when direct quotes from the raw data were utilised. The collected data from the research have been and will be kept locked in a safe place for a period of at least 5 years.

1.9.4 Informed consent

The researcher obtained permission from the Health Research Ethics Committee at the faculty of Health Sciences, Stellenbosch University, before the research commenced, as well as from City Health to do interviews at clinics. Thereafter, the researcher obtained written consent for making audio tape recordings of the interviews with the participants, after the proposed research was fully explained to them.

1.10 CONCEPTUAL AND OPERATIONAL DEFINITIONS

Perception is the processes that organise information in the sensory image and interpret it as having been produced by properties of objects or events in the external, three-dimensional world (Gerrig, Richard & Phillip, 2002).

Carer is defined as any person who continuously gives care and support to another person, who is unable to take care of him-/herself (Freshwater & Maslin-Prothero, 2012:109). In this study carer refers to a person who takes care of infants although sometimes unrelated to the infant.

Adherence is to be a supporter, or a follower (Collins, 2012:18).

Incomplete is described as not being complete, or not finished (Collins, 2012:828).

Immunisation is defined as anti-body formation by using immunising agents to protect children (Hatting, Dreyer, & Roos, 2006:158).

Schedule is defined as a list of tasks that needs to be performed in a set period (Collins, 2012:1487).

1.11 CHAPTER OUTLINE

Chapter one: Scientific foundation of the study

In chapter 1, the background to the study is discussed and is the importance of the study emphasised. A brief overview of the literature, research question, objectives, methodology, definitions of terms and study background are offered in this chapter.

Chapter two: Literature review

Chapter 2 consists of numerous literature sources that were reviewed to highlight the importance of this study.

Chapter three: Research methodology

Chapter 3 offers an in-depth discussion of the research methodology that was used during this study.

Chapter four: Data analysis and interpretation

In chapter 4, the data that had been obtained during the research, and analysed and interpreted, are discussed.

Chapter five: Conclusion and recommendations

Chapter 5 summarises the findings from the analysed data and the recommendations that were made, according to the scientific evidence that had been provided during the research study.

1.13 SIGNIFICANCE OF THE STUDY

This study was done to identify the importance of adhering to the immunisation schedule and to explore the experiences of carers that did not follow the recommended schedule. If a child is not fully immunised, he/she is at risk of contracting preventable diseases that can be fatal.

1.14 SUMMARY

Immunisation is very important in preventing childhood deaths. This chapter gave a brief overview of the methodology and of the ethical considerations that were applied before and during the research. The next chapter gives an in-depth discussion regarding the methodology that had been employed during this study.

1.15 CONCLUSION

Children die daily from diseases that could have been prevented through effective immunisation. Although healthcare facilities are available in South Africa, free of charge,

immunisation schedules of some babies are incomplete. In order for them to have a low risk of contracting preventable diseases, they need to be fully immunised in accordance with the country's prescribed immunisation schedule. As healthcare workers, we are responsible to find solutions to preserve the lives of human beings. For this reason, it is important to conduct research on the problem, to assist healthcare workers to be instrumental in decreasing the infant mortality rate.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

A literature review helps one to understand an existing problem and assists in understanding what has been, or has not been researched regarding the specific problem (Burns & Grove, 2011:189). Furthermore, Lobiondo-Wood and Haber (2010:57-59) allude that it assists in discovering important aspects of a problem and is it therefore an important part of the research process.

Within this study, the literature review aimed at identifying existing reasons for defaulting on childhood immunisations, the significance of completing immunisations and the consequences of defaulting. The researcher made use of websites, such as CINAHL, PUBMED, World Health Organization and government websites. The search keywords and phrases included babies AND immunization / immunisation, vaccine AND coverage, default AND immunizations / immunisations, and reasons AND immunizations / immunisations.

Numerous children die globally of preventable diseases each year. According to the First Triennial report of the Committee on Morbidity and Mortality (COMMIC) in children under 5 years, almost 75 000 children do not reach their 5th birthday (COMMIC, 2011:26).

In South Africa, diarrhea, pneumonia and influenza are reported as the three major causes of deaths in the age groups below 1 year (24.7%) and 1 - 4 years (20.1%) of age (Situation analysis of children in South Africa, 2009:50).

Immunisation aims at preventing diseases from occurring, by introducing agents to the body for anti-body production (Hatting et al., 2006:157). Moreover, immunisation has proven to be an effective tool in preventing children from dying young. Almost 2.5 million deaths were prevented in children younger than 5 years of age as a direct result of effective immunisation during the 21st century (Centers for disease control and prevention, 2009:814).

In South Africa, the Expanded programme on immunisation (EPI) aims at a coverage rate of

90% nationally, for the effective control of vaccine preventable diseases (Situation analyses of children in South Africa, 2009:62).

According to the COMMIC, immunisation coverage in South Africa is excellent (COMMIC, 2011:84). Out of the nine provinces in South Africa, the Western Cape and Gauteng are performing the best with respect to their immunisation coverage levels, with lower infant mortality rates, compared to the other provinces (COMMIC, 2011:41). However, although the Western Cape presents with a very high immunisation coverage rate, it is also the province with the highest default rate on immunisation schedules (COMMIC, 2011:41). This leads to an increased vulnerability of children to contract diseases, such as measles that could have been prevented (COMMIC, 2011:84).

Different reasons are given to explain the problem of defaulting on immunisations. The majority of possible reasons for incomplete immunisation relate to access to vaccine services and parental knowledge regarding the immunisation schedule (Snow, 2009:11).

2.2 HEALTH BELIEF FRAMEWORK

Owing to the fact that carers do not bring children for their vaccinations, or do not complete the vaccination schedules, The Strategic Advisory Group of Experts (SAGE) started a working group in March 2012 on immunisation, who addresses carers' hesitancy towards vaccines (Larson, Caitlin, Eckersberger, Smith & Paterson, 2014:2150-2159).

They define vaccine-hesitancy as a behaviour that can be influenced by multiple factors, including issues relating to confidence where individuals do not trust the vaccine, or the provider of the vaccine. Complacency is another described factor, where individuals do not perceive a need for a particular vaccine, or do not value the importance of the vaccine. Convenience is considered another factor, which relates to the access that an individual has to vaccines (Larson *et al.*, 2014:2151).

These vaccine-hesitant individuals are further described as a heterogeneous group, who holds mixed degrees of doubtfulness in respect of specific vaccines, or vaccination in general. Vaccine-hesitant individuals may concur with the need for all vaccines, but can still continue to be apprehensive about vaccines. Vaccine-hesitant individuals may even refuse to

participate in vaccination, or postpone participation in some vaccines and at the same time consent to other vaccines. Amongst this group of individuals, there are still others who may totally refuse all vaccines (Larson *et al.*, 2014:2151).

Grounded on the above definition, the working group also drafted a “model of determinants of vaccine hesitancy” (Larson *et al.*, 2014:2150). This was organised around three key determinants, namely:

- Contextual influences, which include historic, socio-cultural, environmental and health systems, or institutional, economic and political factors.
- Individual and group influences, which include influences arising from personal perceptions regarding vaccines, or from influences by the social/peer environment.
- Vaccine and vaccination specific issues that are directly related to the characteristics of the vaccine, or the vaccination process (Larson *et al.*, 2014:2151).

This model includes a broad selection of factors that have been identified as potential influences of vaccine hesitancy, drawn from the collective experiences and insights of the SAGE WG members, all of whom are considered experts in their fields and who represent diverse disciplines, with reference to the above definition and model (Larson *et al.*, 2014:2151).

Table 2.1 shows the contextual and interrelated factors regarding non-adherence to the immunisation schedule.

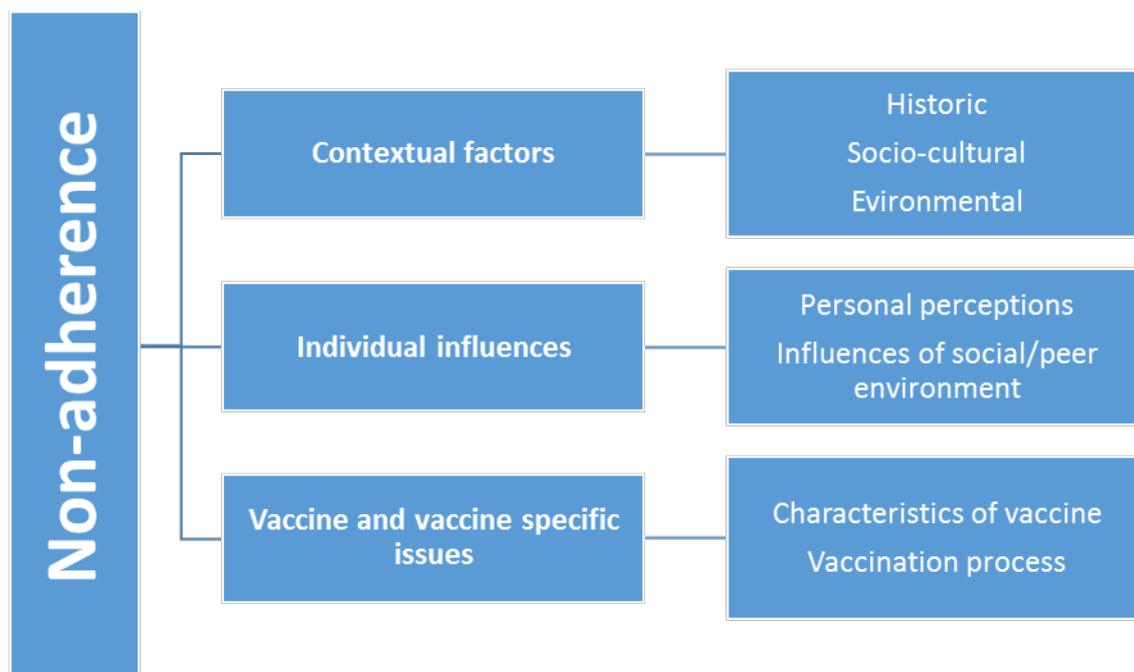


Figure 2.1: Schematic representation of the Health belief model (Larson et al., 2014:2151).

2.3 INFANT MORTALITY RATE IN SOUTH AFRICA

According to the World Health Statistics (WHS) of 2011, nearly 20% of all child deaths occurred in children younger than 5 years old (WHS, 2011:45). As a result, infant mortality rates (IMR) are regarded as important indicators of the general health status of a population (COMMIC, 2011:26).

South Africa reflected a difference in the IMR among its provinces, with the highest estimated rate recorded in the Free State, at 110.3 deaths per 1 000 live births, whereas the Western Cape had the lowest IMR of 28.8 deaths per 1 000 live births in 2008 (COMMIC, 2011:27). The average IMR for Cape Town between 2001 and 2004 was 24 deaths per 1 000 live births, with a further improvement in IMR to 21 per 1 000 live births in 2006 (Groenewalt, Bradshaw & Daniels, 2008:41).

In addition, the under 5 mortality rate is also used as an indicator for monitoring the progress made towards achieving the Millennium Development Goal 4 (MDG4), as it monitors child mortality on a global level. The MDG4's target was to decrease the under 5 mortality rate by two-thirds globally by 2015 (Save the Children Foundation, 2012:2). The MDG4 for South

Africa aimed at achieving a target of 20 deaths per 1 000 live births by 2015 (Situation analysis of children in South Africa, 2009:49). According to statistical data of 2007, South Africa had a children death rate of 53 per 1 000 live births (COMMIC, 2008:27).

John McArthur (2014:1) states that the MDG4's goals were only met by twenty developing countries by 2013. On 31 December 2015, the goals expired, after which they would be reviewed (John McArthur, 2014:1).

2.4 THE IMPORTANCE OF IMMUNISATION

The purpose of the recommended vaccination schedule is to minimise infections during the early vulnerable period in which children are susceptible to fatal infections. However, any barriers and delays in vaccination can impact negatively on a child's health, particularly for illnesses, like rotavirus, where multiple doses are required to be considered effective (Breckman, Theeten, Lernout, Hens, Roelants, Hoppenbrouwers & Van Damme, 2014:7).

As a result, vaccines are important for individuals to reach maximum levels of protection against diseases that are preventable. However, children must receive all vaccines in a prescribed period of time in order to derive maximum effectiveness from immunisations (Abdulraheem *et al.*, 2011:194-203).

Furthermore, child immunisations have been identified as an important intervention in assisting with the achievement of the goal of preventing and decreasing childhood mortality rates (Save the children foundation, 2012:1). In addition, immunisations are also a cost-effective method of preventing child deaths (Abdulraheem *et al.*, 2011:195).

The Patient right charter of South Africa clearly stipulates that everyone has the right of access to healthcare (Act No. 109 of 1996). However, according to Clements, Ntshimiranda and Gasasira (2008:1926-1933), the high childhood mortality rate in Africa is mainly due to mothers and children being desperately in need of interventions, which they are not receiving. They stated that Africa had needed to implement more effective plans to reach the Millennium Developmental Goals (MDGs) of reducing the under 5 mortality rate by two-thirds in 2015, compared to 1999. Child mortality figures of 2000 showed that of the 10.8 million reported deaths in under 5 year olds, 4.4 million children died in Africa. It was found that

pneumonia, measles, malaria, diarrhoea and human immunodeficiency virus (HIV), which are all communicable diseases, accounted for almost 50% of all childhood deaths globally in 2000 (Clement *et al.*, 2001:1926).

Measles continue to be one of the leading cause of vaccine-preventable deaths in children under 5 years of age, worldwide. This is particularly relevant in developing countries, with an estimated 20% of measles related deaths occurring in children under 1 year of age. In 2008, measles related deaths were estimated at 164 000 worldwide, with 95% of the cases occurring in low income countries having inadequate health systems. In addition, large epidemics, or outbreaks are considered to be indicative thereof that an extensive number of susceptible individuals exist, who might not have received their vaccinations for various reasons, which could have prevented such infections (Sapa *et al.*, 2015:2).

A major measles outbreak in Germany recently caused great concern, as about 850 people had contracted measles since October 2014, with 25% of those infected individuals needing hospital admission. In Germany, immunisation is not compulsory, resulting in an estimated 10% of young adults not being immunised against measles and other illnesses (Sapa *et al.*, 2015:2). Therefore, it is important to highlight the importance of immunisation against communicable diseases, such as measles to prevent babies from contracting such illnesses.

Furthermore, routine measles vaccination is made available at 9 months of age in the World Health Organisation (WHO) African region (Torun, Demir, Hidroglu & Kalaca, 2007:191). An estimated 15% of these vaccinated children are expected not to develop an adequate protective immune response. Coupled with poor immunisation coverage and incomplete immunisation adherence in poorer countries, the number of susceptible individuals can increase to such an extent that possible sporadic outbreaks can occur.

In order to eliminate measles and other outbreaks, immunisation coverage must be maintained above 95% for the whole country (Torun *et al.*, 2008:194).

Routine measles vaccination at 9 months of age was introduced in South Africa in 1975. In 1995, a second routine dose at 18 months was added to the national vaccine schedule (Ntshoe, Mc Anerney, Archer, Smit, Harris, Tempia, Mashele, Singh, Thomas, Cengimbo, Blumberg, Puren, Moyes, Van den Heever, Schoub & Cohen, 2013:1).

The South African health department set a target to eliminate indigenous measles transmission by 2002. In order to achieve this goal, supplemental vaccine campaigns were subsequently organised every 4 years since 1996 and every 3 years since 2003 (Ntshoe *et al.*, 2013:1). Despite the above mentioned efforts, South Africa still experienced a large measles outbreak between July 2003 and November 2005 and again in 2009, according to the Integrated Regional Information Networks (IRIN, 2015:1). The Western Cape had been identified as the province with the highest incidence of measles cases, with a total of 447 cases reported in the 2003, 2005 and 2009 outbreaks. The likely cause of these outbreaks was attributed to the failure of routine and immunisation measures to achieve the required vaccination coverage (IRIN, 2015:1).

South Africa subsequently implemented a supplementary nationwide measles vaccination campaign, aimed at achieving a 92% immunisation coverage nationally, with a resultant decrease in reported new measles cases, following the implementation of successful vaccine strategies against measles (IRIN, 2015:1).

A study concluded in Nigeria, stated that the EPI had planned to immunise 90% of infants globally and that it had been extremely difficult to analyse the reasons for poor, or non-vaccination, especially in resource poor areas, taking into consideration the effectiveness of immunisation. Every child needs to be protected from potentially deadly infections as soon as possible and can this be achieved through adhering to the recommended vaccine schedules (Abdulraheem *et al.*, 2011:194).

2.5 LEADING CAUSES OF CHILDHOOD DEATHS

The impact of pneumococcal disease and rotavirus diarrhea on child deaths accounts for 5% each of the U5MR, globally (WHO, 2011:71). Similar results are seen for Cape Town, with a high reported mortality rate, due to pneumonia and diarrhea (Groenewalt *et al.*, 2008:42).

In South Africa, two provinces, Gauteng and the Western Province, have been associated with high rates of meningococcal disease. Outbreaks of this disease have occurred sporadically in South Africa, as was evidenced by a large outbreak in the Gauteng province in 2005 (IRIN, 2015:1).

2.6 EFFECTIVENESS OF IMMUNISATION

Rotavirus is considered as the most common cause of fatal childhood diarrhea, globally (WHO, 2011:14). The inclusion of the rotavirus vaccine into vaccination schedules has contributed to a marked decrease in rotavirus gastro-enteritis related deaths (Breackman *et al.*, 2014:7). The rotavirus vaccine was introduced in Belgium as early as 2006 and was the national vaccine coverage reported at 30% in 2008. The full public health benefit was reflected when the successful implementation of the vaccine demonstrated a significant decrease of 33% in the number of hospital admissions for acute gastro-enteritis cases during 2007 - 2009 (Breackman *et al.*, 2014:7).

In addition, the Rotarix vaccine (against rotavirus diarrhea) and the Prevenar vaccine (against pneumococcal pneumonia) had been found to be effective globally and were they introduced into the EPI in 2009 (COMMIC, 2011:33).

2.7 INCOMPLETE IMMUNISATIONS

A Kenyan study also reflected a decline of 70% in pneumococcal related deaths. However, their data showed that, of the total number of children who had started their vaccinations, almost 20% had defaulted and had not completed the full recommended course (Kenya Medical Research Institute Wellcome Trust Research Programme, 2011:110).

The first round vaccination rate was found to be significantly higher than the second and third rounds of booster vaccinations, i.e. at 18 months and at 5 years (Kenya Medical research Institute Wellcome Trust Research Programme, 2011:110). Another study in Western Bengal compared the vaccine coverage rate between two districts and reported a coverage rate of 60 - 70% (Dasgaputa, Karmakar, Mandal, Roy, Mallik & Mansal, 2005:225). This study also showed that parents had not returned for their follow-up appointments. Most of the children had received their primary vaccines, but up to one-quarter of patients had not returned to complete their immunisation schedules (Dasgaputa *et al.*, 2005:225).

The Western Cape has reflected a similar rate drop of 40% from the EPI after the 9th month immunisation (COMMIC, 2008:84). As a consequence, children have been at risk of contracting potentially fatal diseases, such as measles (COMMIC, 2008:84).

2.8 REASONS FOR INCOMPLETE IMMUNISATIONS

The reasons for incomplete immunisations can be divided into four main categories, namely the supply and access to services, family characteristics, parental knowledge and communication. A literature review found that the supply of and the access to services had accounted for 43% of the reported reasons. In addition, it was also identified that parental knowledge and attitudes had accounted for 28%, followed by family characteristics at 23% and lastly, communication at 6% (Save the Children Foundation, 2012:20).

According to a systematic review done by Rainey Watkins, Ryman, Sandhu, Bo and Banerjee (2011:8215-8221), 838 reasons were linked to under vaccination in 202 articles. They state that immunisation systems accounted for 45% non-adherence, knowledge and attitudes of parents for 22%, while immunisation information accounted for 7% and family dynamics for 26% of the reported reasons for under-vaccination and non-vaccination, respectively (Rainey *et al.*, 2011:8215).

2.8.1 Supply and access to immunisation services

The most common reasons for defaulting include the travel distance to immunisation facilities, the quality of care experienced at healthcare facilities, the availability of vaccines and related services (Snow, 2009:12). According to Clements *et al.* (2008:1926), health systems are ineffective, due to staff shortages, poor planning, and the ineffective monitoring of performance and systems.

Children need to attend all their subsequent appointments, following their first immunisation visit, in order to complete the full vaccine schedule (Snow, 2009:16).

If mothers have a bad experience, or receive poor service, they might not return to the facility and miss future appointments (Snow, 2009:16).

Staff with poor attitudes often complicate this, especially if parents are, for example, being berated for missed appointments, or for a loss of their clinic cards (Snow, 2009:16).

Other factors, such as waiting for long hours in lines from early mornings and during operating hours of vaccination facilities, can also demotivate parents from attending future

immunisations (Favin, Steinglass, Fields, Banerjee & Shawney, 2012:229-238).

Missed opportunities have also been cited as a contributing factor (Woods, 2012:12). Often parents attend the healthcare clinics for other reasons than for the immunisation of their children. The failure by healthcare staff to always screen the immunisation records can lead to a missed opportunity that may have prevented and corrected incomplete immunisations (Onyiriuka, 2005:72).

Rainey *et al.* (2011:8215-8221) state that missed opportunities can be attributed to the fact that some children are only given curative services and that no immunisation statuses are being assessed during contact. According to these researchers, some parents may not have the child's clinic record card present on the day of the clinic visit. They further link under-vaccination to the fact that some parents live far from antenatal, or prenatal care facilities (Rainey *et al.*, 2011:8215-8221).

Studies that were reviewed indicated that the unavailability of vaccines had been caused by cold chain problems and vaccines that had not been stocked properly. In addition, parents had travelled for long distances and had missed work only to find out that they could not be helped, due to the unavailability of vaccines, which made it unlikely that they would return to the facility again. Moreover, Favin *et al.* (2012:229-238) indicated that due to the consistent unavailability of vaccines, people had been reluctant to attend health facilities.

2.8.2 Parental attitudes and knowledge

A review of grey literature, focusing on the reasons as to why children were not immunised, suggested that the leading reason for unimmunised children had been the attitudes and knowledge of parents (Favin *et al.*, 2012:229-238).

However, parents have different views on routine vaccinations. This lack of understanding of the health impact and benefits of immunisation is another major barrier to completing vaccination programmes (Prislin, Dyer, Blakely & Johnson, 2008:1825). Many parents are unaware of the preventative role that vaccines play (Jheta & Newell, 2008:419).

A study done in Nigeria indicated that only 14% of carers understood that the completion of

vaccine schedules before 9 months of age are important in preventing fatal diseases. Also in this study, it was found that only 12% of the mothers knew that the babies had been given the Bacillus Calmette-Guérin (BCG) vaccine at birth. This study found that only 37.2% of the mothers had known that immunisation was against diseases that are potentially lethal to their children (Abdulraheem *et al.*, 2011:194-203).

Reasons related to parental attitudes and knowledge and their effects on poor immunisation adherence were grouped into eight categories, of which the main four included the lack of knowledge of caregivers about immunisation and disease prevention, parental fear of adverse events, the false beliefs that vaccinations are harmful or ineffective, and a deficiency in enough motivation of caregivers to vaccinate the children. In certain countries, like India, Pakistan, Benin and Nigeria, social and cultural beliefs influence communities not to trust the healthcare systems, who deliver those immunisations and the promised benefits thereof, which effectively increase underutilisation of preventive measures among those communities (Rainey *et al.*, 2011:8215-8221).

Furthermore, perceptions of parents regarding the purpose and efficacy of vaccines can be influenced by healthcare workers not providing adequate information (Leask, Kinnersley, Jackson, Cheater, Bedford & Rowles, 2012:154).

The systematic review done by Rainey *et al.* (2011:8215) showed that immunisation information had been conveyed thoughtlessly and incorrectly by staff. They also demonstrated the absence of interaction between communities and the vaccination programmes. Home visits by health educators were rarely performed and was poor quality information regarding immunisation being communicated through radio and television networks. All WHO regions struggled with communication and information sharing in respect of immunisation programmes (Rainey *et al.*, 2011:8215).

In Italy, an exploration of parental acceptance of the recommended vaccinations found that the majority of parents had relied more on the advice of their pediatricians, than government healthcare workers, as to whether to participate, or not (Coniglio, Platania, Privitera, Giammanco & Pignato, 2011:305).

Nigeria concluded that poor immunisation adherence was largely influenced by the mother's availability and a lack of knowledge about immunisations. The study also found that the belief and disapproval of vaccines increased the likelihood of non-immunisation (Larson *et al.*, 2014:2150-2159).

Cultural and religious beliefs, as well as the fear of vaccine side effects can also influence parents' decision not to have their children immunised (Trauth, Zimmerman, Musa, Mainzer & Ntuni, 2003:13). The fear of needles is a known psychological barrier to completing immunisations in children and caregivers were found to be concerned about the potential harm to the child (Reyna, 2011:3790).

The two most frequent adverse effects following immunisation that had been identified, i.e. injection induced anxiety and pain, have been linked to poor compliance with immunisation programmes (Taddio, Ipp, Thivakaran, Jamal, Parikh, Smart, Sovran, Stephens & Katz, 2012:4807).

In a study conducted in Toronto, Canada, 24% of parents and 63% of children admitted to fearing needles. This has a negative impact on vaccination compliance, resulting directly from fear induced avoidance of vaccinations (Taddio *et al.*, 2012:4807).

2.9 SOCIO-ECONOMIC FACTORS

The level of education and wealth within the household can influence child immunisations.

Rainey *et al.* (2011:8215) state that the most regularly noticeable sub-categories that arose from the systematic review of factors affecting poor immunisation, were caregivers that had not been well educated, the socio-economic status of poverty, children with more than one sibling, or children coming from a large family, and also children belonging to a small clinic or religious group. They also state that the education levels of both mother and father were assessed and did they find that low education levels of the maternal caregiver especially, had contributed towards poor immunisation levels (Rainey *et al.*, 2011:8215). In addition, in Greece, socio-economic factors, such as an increased number of siblings were also found to be an important factor contributing to under-vaccination (Larson *et al.*, 2014:2151).

A study done in Turkey to investigate the measles vaccine coverage rate, found that the immigration status of the parents and the level of education of the parents were both factors that had affected vaccine coverage. Children with immigrated parents had a higher rate of non-vaccination, compared to children of non-immigrant parents (Torun *et al.*, 2007:4807-4812).

Household income levels have an impact on vaccine compliance. The wealthier households have an increased probability that the children will have completed their immunisation schedules. Moreover, according to a Nigerian study, lower household income was associated with an increased incidence of incomplete immunisations, compared to parents who reported a higher household income (Abdulraheem *et al.*, 2011:200).

A study that was done in South Africa also showed that in some cultures, funerals can last up to a week, which may result in missed vaccinations. Some parents have to look after other children as well, which does not allow them to travel long distances for their own children's immunisations. According to some studies, mothers have up to three jobs in Dhaka, Bangladesh which makes it almost impossible to take their children to the facilities for vaccination, due to work commitments (Favin *et al.*, 2012:229-238).

2.10 COMMUNICATION AND INFORMATION

A lack of knowledge about how immunisation works at the level of individuals, or society (herd immunity) can impede the comprehension of communicated messages (Reyna, 2011:3790-3797).

Fields and Kanagat (2012:2) state that some parents lack understanding regarding routine immunisation programmes, especially with regards to the intervals in between scheduled appointments.

Moreover, members of the public might not have sufficient background knowledge to understand public health messages about vaccination. People's understanding of the relevance of vaccines relies upon their prior knowledge, life experiences, religion and beliefs. Consequently, people are not motivated to understand and seek meaning, particularly relating to unexplained adverse effects, such as autism, which may be associated with not

having received the measles, mumps and rubella (MMR) vaccines, which has a bearing on carers' comprehension and later decisions to not participate in immunisation programmes. The systematic review done by Rainey *et al.* (2011:8215-8221) showed that immunisation information had been conveyed thoughtlessly and incorrectly by healthcare staff. Furthermore, they also showed an absence of interaction between communities and the vaccination programmes. Home visits by health educators had been rarely performed and poor information regarding immunisation had been given through radio and television networks.

A study that was concluded in Columbia, explored the effectiveness of communication strategies relating to immunisation knowledge and found that the majority of parents had cited television (38.0%) as their main source of information, followed by vaccination days (33.2%) and lastly, consultations with healthcare workers (31.4%). In addition, the majority of parents (72.3%) revealed that the information received at hospitals through information sessions and reading material in respect of immunisation services had been sufficient (Garcia, Velandia – Gonzalez, Trumb0, Pedreira, Bravo – Alcantara & Danovaro – Holliday, 2014:1). This was consistent with the results of a study done in Iraq, which also mentioned television as the main source of immunisation information and that only 25% of parents had responded to using the internet to collect information on immunisation (Al-lala, Bahari, Al – Qazaz, Salih, Jamshed & Elkalmi, 2014:1).

However, all WHO regions struggle with communication and information in respect of immunisation programmes (Rainey *et al.*, 2011:8215-8221). According to a study done in India, most parents reported that they had been unaware that their children were supposed to get more vaccines after the first vaccination (Dasgaputa *et al.*, 2005:224).

In addition, a difference in the immunisation rate was noted between Muslim and Hindu families, with the Muslims having a higher default rate as a result of a lesser awareness. Parents who had been educated with regards to the immunisation schedule, increased the immunisation adherence rate by 20% (Elliot & Farmer, 2006:19).

2.11 STAFF ATTITUDES

Favin *et al.* (2012:229) state that the manner in which health staff treated the parents or caregivers contributed towards missed subsequent vaccinations. According to the review, mothers were screamed at when arriving late, or when children's vaccination cards were lost (Favin *et al.*, 2012:229).

As a result, the attitudes of staff discouraged mothers to return to the clinics for their next appointments. The review also indicated that since health workers had not informed mothers properly regarding the next appointment, they had not returned on the correct dates. Even though health workers reported that they had provided the return dates, it only showed on one-quarter of the clinic cards during a study that was done in Mozambique (Favin *et al.*, 2012:229).

Some studies also indicated that at some health facilities, carers had been scolded at for arriving late for vaccinations and that some institutions had closed earlier than they should, which caused the carers to miss the children's vaccinations for fear of verbal reproach. Moreover, in a study that was done in Kenya, focused group discussions were performed on some patients, from which it was concluded that the patients felt that they had been harassed and not treated well by staff (Favin *et al.*, 2012:229).

The review of grey literature also indicated that patients complained about staff attitudes in South Africa. The patients responded that they had sometimes been scolded at by the nurses, when raising complaints, such as enquiring about the long waiting times at the clinics (Mkhwanazi, 2012:1).

2.12 FALSE BELIEFS

A study done in Nigeria concluded that ill children had been reported as the most common reason for not attending immunisation appointments (Onyiriuka, 2005:76).

According to another study, a concern that was raised for causing missed vaccinations was the fact that health workers were unwilling to immunise children when they were sick. They also believed that if a child was older than 12 years of age, they should not be immunised. According to the study review, health workers were unwilling to immunise sick children, because of their fear that parents would blame them if the child's condition worsened after

the vaccination (Favin *et al.*, 2012:229).

2.13 GENDER INFLUENCE ON VACCINATION

Regions in India, Pakistan, Bangladesh, Turkey and Nigeria were studied and found to display higher vaccination levels for boys, compared to girls, because of the cultural beliefs in those countries (Rainey *et al.*, 2011:8215).

In Asia and India, girls are being vaccinated later than boys, or are not being vaccinated at all. According to the review, some husbands do not allow their wives to attend clinics, while some wives feel uncomfortable to be helped by a male, which leads to no, or missed vaccinations (Favin *et al.*, 2012:229).

2.14 SUMMARY

The infant mortality rate (IMR) indicates that children are still dying globally from diseases that could have been prevented through immunisations, whereas South Africa reflects higher infant death rates, resulting from preventable diseases.

The literature indicates that children, who default on their immunisation programmes, increase their risk of contracting potentially fatal diseases, such as pneumonia and measles.

Immunisation is considered most effective when complying with the prescribed immunisation schedule for the prevention of diseases. As a result, South Africa incorporated the Expanded programme on immunisation (EPI) schedule to decrease the infant mortality rate.

The literature indicates that defaulting vaccination schedules appear to mainly relate to service delivery by healthcare workers, parental knowledge and parents' attitudes towards immunisation. The majority of the reasons for non-compliance indicated that poorer socio-economic conditions play an important role in increasing the default rate. Most of the reasons appeared to be applicable and relevant, globally.

Attitudes and parental knowledge also play important roles in incomplete vaccinations. The literature shows that some parents are not well informed about the vaccination schedule and

that parents have different views on the importance of vaccination.

The Western Cape Province appears to follow global trends in respect of leading causes of infant deaths and incomplete immunisations, despite adequate immunisation coverage. Hence, there is a need to explore the factors that cause incomplete immunisations.

In chapter 3, the research methodology that was used to explore the perceptions of carers regarding non-adherence to the immunisation schedule is discussed.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

A background to the study and the outcomes from the literature review, regarding incomplete vaccination schedules were discussed in the former chapters.

This chapter describes the applied research methodology, which was directed at establishing the perceptions of carers regarding incomplete immunisation schedules.

A research methodology is the procedure that is used by a researcher to design a study, whereby the researcher obtains information from planned sources and examines the information with regards to the stated research question (Polit & Beck, 2012:12).

3.2 AIM OF THE STUDY

The aim of this study was to explore the perceptions of carers regarding non-adherence to the immunisation schedule.

3.3 OBJECTIVES

The objectives of the study were to:

- Explore carers' understanding of the immunisation schedule.
- Determine the challenges that carers experience in the context of non-adherence to the immunisation schedule.
- Determine possible solutions from the perspectives of carers.

3.4 RESEARCH METHODOLOGY

3.4.1 Research design

Qualitative research refers to describing the life experiences of human beings and allows for the researcher to gain insights into human experiences that would guide the nursing practice (Grove *et al.*, 2013:57), for example. It allows the researcher to explore the richness, depth and the complexity of human beings. A qualitative design, with a descriptive methodology was applied during this study. Husserl (as cited by Reiners, 2012:2) developed a descriptive phenomenology that incorporated the explanation of everyday experiences, while prejudged opinions and biases were placed aside (Reiners, 2012:2). The purpose of a descriptive study is to notice, explain and make detailed notes of a situation as it spontaneously happens (Polit & Beck, 2012:226). The researcher was able to give detailed information after collection of the data. The collected data supported the findings with regards to effective solutions for the initial research problem.

According to Polit and Beck (2012:73), a research question is a certain problem that a researcher wants to explore. The types of data that need to be collected are guided by the research question (Polit & Beck, 2012:73). Therefore, the research question for the proposed study was: ***What are the perceptions of carers regarding non-adherence to the immunisation schedule?***

3.4.2 Population and sampling

A population refers to all elements that meet a particular criterion that can be included in a study (Burns & Grove, 2011:51). For this study, the population consisted of carers of children from various clinics between the ages of 9 - 18 months, with incomplete immunisation schedules. The study was conducted in the Eastern sub-district of Cape Town in the Western Cape. The researcher was not affiliated to any of the clinics included in the study.

According to Lobionde-Wood and Haber (2010:224), sampling is when one identifies a certain number of a specific population to exemplify the whole population. A sample is the certain

number of people identified to represent the whole population (Lobionde-Wood & Haber, 2010:224).

Two carers each from four clinics participated in this research. During clinic visits, missed and late opportunities were identified and were participants nominated accordingly.

Purposive sampling was applied in this study. Burns and Grove (2011:545) state that purposive sampling is when the researcher deliberately selects certain subjects to participate in the study. During this study, the sample size was consciously selected by the principal researcher, in accordance with the inclusive criteria, i.e. carers of children between the ages of 9 - 18 months. The sample size was determined by the saturation of data. According to Grove, Burns and Gray (2013:691), saturation of data in qualitative research occurs when additional sampling provides no new information, hence when redundancy is achieved. The sample size was determined by the insightful descriptions that the participants gave regarding non-adherence to immunisation schedules during the interviews.

3.4.3 Instrumentation

Grove *et al.* (2013:271) state that an interview occurs when the researcher and participant interact for the purpose of collecting research data. Individual interviews were conducted based upon a semi-structured interview guideline that guided the interviews during the research. According to Polit and Beck (2012:742), a semi-structured interview occurs when the researcher is guided by a topic list, instead of asking a number of questions. The semi-structured interview guideline had been derived from the objectives of this study. This guideline was validated by the supervisor and co-supervisor of the study. Due to the fact that the researcher had experience in this field, the researcher also contributed towards the layout of the interview guideline.

The semi-structured interview guideline consisted of four open ended questions regarding non-adherence to the immunisation schedule. The first and second open ended questions explored the knowledge of the carers regarding immunisation. The third open ended question was based upon the difficulties that carers may experience regarding immunisation services

by healthcare workers. The last open ended question dealt with how baby immunisations could be improved.

3.4.3.1 Pilot test

According to Polit and Beck (2012:737), a pilot test is a smaller form of the actual study that is done in order to prepare for the larger study.

A pilot test is done to orientate and prepare the researcher for the processes that will be followed during the study (De Vos *et al.*, 2012:236). According to De Vos *et al.* (2012:236), a researcher should never commence a study, unless the researcher is confident that no errors, or pitfalls would occur during the study.

The researcher had therefore conducted an interview with one participant, before the larger study commenced, to determine if there were any problems or shortcomings in the interview guideline. No pitfalls were experienced with the semi-structured interview guideline during the pilot test.

3.4.4 Validity

Polit and Beck (2012:745) describe validity as a quality standard that relates to the extent to which the deductions made in the study are authentic and justifiable. The model of Lincoln and Guba (1985:290) was focused on during this study to ensure trustworthiness. Trustworthiness was obtained through applying the principles of credibility, dependability, conformability and transferability (De Vos *et al.*, 2011:419).

3.4.4.1 Credibility

Credibility refers to whether the data being collected during the interviews and the interpretation thereof are believable (Polit & Beck, 2012:585).

The researcher made use of two strategies, namely peer de-briefing and member checking, to ensure credibility of the gathered information. The interviews were all audio taped and subsequently transcribed *verbatim*. Furthermore, all transcriptions were re-checked against

the tapes to strengthen credibility. Additionally, the researcher offered a comprehensive description of the research processes in the research proposal, with particular focus on the research sample selection, data collection and the data analysis methods to increase credibility.

3.4.4.2 Transferability

Transferability is when the researcher determines whether the research findings can be transferred from one situation to another (De Vos *et al.*, 2011:420). Adequate background information was given to describe the context of this study to ensure comparisons. To enable transferability, this study was based upon Anderson's theoretical framework, as advised by Bundt and Hsou (2004:795). Hence it may be possible to generalise the findings of this study to government baby immunisation clinics in the broader Western Cape.

3.4.4.3 Dependability

De Vos *et al.* (2011:420) state that dependability is when the researcher must ensure that the research processes are logical, audited and well documented. The data collection and data analyses methods used in this study were validated by the researcher, the supervisor and an experienced qualitative researcher. The fieldworker and the researcher discussed the transcripts to verify that the analyses of the transcripts corresponded with the recorded interviews. The fieldworker endorsed the themes and sub-themes that emerged.

3.4.4.4 Conformability

Grove *et al.* (2013:370) state that a confirmatory analysis is used by a researcher to prove the expectations related to the data obtained. Moreover, they allude that the data must be reliable, that a strong research design must be used and that valid measurement methods must be employed (Grove *et al.*, 2013:375). Consequently, field notes, memos, transcripts and the reflective report of the researcher allow for the reader to follow the processes of the research study. The clear and detailed methodological descriptions allow for scrutiny (Shenton, 2004:72).

Raw data was used from the tape recorder for the data analysis. The recordings were also transcribed precisely to enable conformability.

The supervisor of this study checked for similarities between themes. The transcripts were also checked by the supervisor. Both the researcher and supervisor read and re-read the transcripts to reach consensus on the identified themes and sub-themes.

3.4.5 ETHICAL CONSIDERATIONS

The rights of humans need to be protected when they are being involved to take part in a research study (Polit & Beck, 2012:150).

The researcher must abide by the four basic ethical principles of autonomy, beneficence, non-maleficence and justice (Pera & Van Tonder, 2011:331). The researcher adhered to these principles in the study as follows:

3.4.5.1 The principle of autonomy

This principle explains that humans can control their own lives and that they can do with it as they wish (Grove *et al.*, 2013:164). During this research, the researcher allowed the participants to make their own decisions as to whether they wished to participate, to continue with, or withdraw from the research with no penalty, or negative consequences.

3.4.5.2 The principle of beneficence

This principle comprises the prevention of any harm, or discomfort that the participant might experience during the research (Burns & Grove, 2011:118). Furthermore, harm can be identified in research as physical, emotional, economic, or social (Burns & Grove, 2011:118). The researcher ensured that no emotional harm was done by allowing the participants to pause the interview at any moment when feeling uncomfortable in answering a question. None of the participants needed counselling after the interviews, but it was available if needed.

3.4.5.3 Confidentiality and anonymity

Information given by the participants was under no circumstance disclosed, except for research purposes and no data being provided by any participant could be linked to the participant (Pera & Van Tonder, 2011:335). Consequently, neither the clinics, nor the participants were referred to by name. The researcher ensured that pseudonyms were used, whenever direct quotes from the raw data were incorporated. Raw data obtained from the research was kept locked in a safe place and will continue to be locked away safely for at least 5 years. The data being collected during this research was only made available to the researcher and the supervisor.

3.4.5.4 Informed consent

Informed consent implies that the researcher has ensured that all possible and necessary information with regards to the goals of the investigation, the expected amount of time that participants would be involved, the format and procedures that would be adhered to during the expected investigation, as well as all the possible advantages, disadvantages and any dangers that might affect potential participants, have been made available to the responders, or their appointed legal representatives. In addition, this includes submission of the researcher's credibility (De Vos *et al.*, 2011:117). Voluntary participation and ensuring that no harm to respondents would occur as a result of participation, have become part of the concept of informed consent (De Vos *et al.*, 2011:117).

The researcher firstly obtained permission from the Health Research Ethics Committee at the Faculty of Health Sciences, Stellenbosch University, as well as from the Cape Town City Health Department, before the research commenced. Thereafter, the researcher obtained written consent for making audio tape recordings of the interviews with the participants.

3.4.6 Data collection

Data collection is when the researcher brings together information to write about a research problem (Polit & Beck, 2012:725). The researcher received training by the supervisor and an experienced qualitative researcher on how to do interviews. While doing the research, the

researcher was accompanied by a fieldworker with experience in interviewing for qualitative research purposes.

The heads of the different clinics were personally contacted by the principal researcher to obtain permission to do the interviews at the various clinics. The staff members at the different clinics were also informed about the study that would be done at their clinics. They allocated private rooms in which the interviews were held.

The heads of the clinics gave permission for the researcher and fieldworker to interview the participants while they were visiting the clinics. At all of the clinics where the study was done, carers first had to weigh the babies before they were given medical care. The researcher obtained information regarding missed vaccinations during these times. The Road to Health Charts were read to check for late, or missed opportunities.

Participants were identified based upon the sample inclusion criteria, before interviews commenced. When participants met the sample criteria, they were informed about the interviews and written consent was obtained for making audio tape recordings during the interviews obtained from each qualifying and willing carer.

An interview is a method to collect data, whereby the participants are asked questions, either by telephone, or face-to-face (Polit & Beck, 2012:731).

The interviews were conducted by the researcher and a fieldworker, who has experience in qualitative research methodologies. The fieldworker was well informed of her role, which included operating the tape recorder and the writing of field notes. Field notes were completed immediately after each interview by the researcher and fieldworker.

The researcher conducted eight interviews with carers of babies, who had not adhered to the immunisation schedule, at four selected governmental baby clinics in the Eastern sub-district of the Western Cape. Two caregivers were interviewed at each clinic. The interviews were conducted from the 23rd of June 2015 to the 16th of July 2015. The participants were easily identified, since missed vaccinations appeared to be a common occurrence in all clinics. All eight participants were interviewed and saturation of data occur after these few interviews.

Grove *et al.* (2013:271) state that an interview occurs when the researcher and participant interact for the purpose of collecting research data. Individual interviews were conducted. Each interview did not last for more than 1 hour (De Vos, Strydom, Fosche & Delport, 2011:351). Simple English was used to enable all of the participants to understand the questions. In some instances, where the interviewees preferred to speak Afrikaans, the interviews continued in Afrikaans.

An audio tape recorder was used to record the interviews thereby enabling the researcher to better focus on the interaction as well as the relationship between the researcher and participant (Grove *et al.*, 2013:271). After the interviews, the tape recordings were kept locked in a safe place. The tape recordings were only accessible to the researcher and the supervisor. A second tape recorder was on standby as a precautionary measure in case of technical failure (De Vos *et al.*, 2011:359). Each participant was made fully aware of the audio tape recording and pseudonyms were used to maintain confidentiality.

Field notes refer to the unorganised monitoring made in the field and how such monitoring is interpreted (Polit & Beck, 2012:728). Field notes were made during and completed immediately after each interview by the researcher and fieldworker.

3.4.7 Data analysis and interpretation

Data analysis is a process whereby the information obtained during data collection is interpreted and evaluated (Lobiondo-Wood & Haber, 2010:93). Data analysis refers to a process through which the collected data is being interpreted into meaningful concepts and in developing knowledge (Grove *et al.*, 2013:279).

The purpose of data analyses is to arrange and structure the data in order to extract meaning from it (Polit & Beck, 2012:556). According to Polit and Beck (2012:557), qualitative analysis is a process of connecting data together and linking the outcomes to precursors. Furthermore, qualitative analysis also encompasses assumptions and substantiation, the revision and rectifying of data, and the making of possible recommendations from and justifying the data.

Polit and Beck (2012:557) also highlight the importance of *verbatim* transcriptions of the recording on audio tapes in the process of data analysis, emphasising that researchers must

check that the transcriptions are authentic and that the validity of the interview encounter is demonstrated in the transcriptions.

Transcriptions of the recorded data were done after completion of the interviews. The researcher made use of a qualified transcriber to transcribe the raw data. The researcher listened repeatedly to verify that all of the data was captured.

The researcher made observations, while listening to the recordings. The principle of bracketing was employed during the process of data analysis. Bracketing can be described as the method of determining and postponing any predetermined opinions and convictions relating to the subject of the study (Polit & Beck, 2012:721).

The researcher read and re-read the transcripts to become familiar with the data content. Reduction of data occurred through coding of the data. Coding is when the researcher labels the data (Grove *et al.*, 2013:281). Thereafter, categories were formed according to the findings. The framework of Miles and Huberman (2007:181) was used to guide the analyses of the data.

3.4.7.1 Memo'ing and reading of the data

The researcher read and re-read the data transcripts to familiarise her with the content. After this, the researcher listened to the recordings numerous times. Margin notes were made on the transcripts.

According to Creswell (2007:183), memos must be key concepts and short phrases of what the reader identifies. Due to the reading and memo'ing of the data, the researcher was able to obtain vital live experiences of the participants regarding their reasons for non-adherence to the immunisation schedule. Categories were made by reflecting on the data.

3.4.7.2 Coding of the data

The process of changing raw data into a standardised form of data processing and analysis, is referred to as coding (Polit & Beck, 2012:722).

This occurs when the researcher breaks up the information. In this study, the researcher made use of recurring words and grouped them together. Headings were used to link related information. As the researcher worked with the data, the codes changed several times, as the data analysis and coding were refined.

3.4.7.3 Themes emerging from the data

An occurring regularity, which emerges from the analysis of qualitative data, is referred to as a theme (Polit & Beck, 2012:744). The researcher described and classified the data. Detailed experiences of the data were given. Several codes were grouped together to form the same idea. Themes and sub-themes emerged from the data. Interpretations were made from the researcher's point of view and from the viewpoints of the broader literature.

3.4.7.4 Interpretation of the data

Data interpretation can be described as the process through which one attempts to make sense of the study results and from the subsequent evaluation of their implications (Polit & Beck, 2012:731).

The researcher went beyond codes and themes to identify the real meaning of the data. Thereafter, the researcher formed interpretations, which were then linked to wider research literature findings that had been developed by other researchers.

3.4.7.5 Representation of the data

A visual representation of the analysed data was finally made by the researcher. A written report of the collected data is presented in the next chapter. Sub-headings were extrapolated out of themes. The researcher verified the information that had arisen from the data analysis with the fieldworker. The term, saturation, refers to the moment that the collection of further qualitative data becomes redundant and the moment at which a sense of closure is reached (Polit & Beck, 2012:742). During this study, the saturation of data occurred after the eight interviews, because the researcher could find no new information from the last interview.

3.5 SUMMARY

This chapter in detail described the aim of the study, the objectives, the research design, the population and sampling methods being employed, the instrumentation used, and the principles of validity, ethical considerations, data collection and data analysis and interpretation.

The data analysis and subsequent interpretation of the research findings are discussed in detail in chapter 4.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

4.1 INTRODUCTION

This chapter describes the research findings of this study. The data being collected from the interviewed child carers were analysed to describe the realities around the experienced non-adherences to the immunisation schedule.

The raw data was transcribed word for word to ensure the trustworthiness of the collected data. Furthermore, the transcripts were continually read and re-read to enhance trustworthiness. The data was also reduced through coding, which enabled the identification of predominant themes. Lastly, the data was analysed in accordance with the approach of Miles and Huberman (2007:181).

4.2 DISCUSSION OF SAMPLE AND ITS CHARACTERISTICS

Carers of babies between the ages of 9 and 18 months, who had not adhered to the immunisation schedule, were interviewed. There were eight participants in total, of which all were female. All eight of these participants received primary education, with one participant being a tertiary student.

Eighty percent of the participants were unemployed. One participant was divorced, another was widowed and only one participant was married. The other participants were single parents.

4.3 THEMES THAT EMERGED FROM THE INTERVIEWS

Four main themes emerged from the interviews, namely accessibility of clinics, parental knowledge, other responsibilities and staff attitudes. Sub-themes emerged from the four main themes. These four main and sub-themes are represented in Figure 2.2.

The first theme, accessibility of clinics, had six sub-themes, i.e. waiting times, operational hours restrictive, location of clinics and crime, distance to clinics, cost of transport and vaccine shortages. The second theme, staff attitudes, consisted of two sub-themes, namely staff conduct and stigmatisation. The third theme, parental knowledge, comprised of the three sub-themes, i.e. clinic cards, appointment dates and immunisation schedule. Finally, the fourth theme, other responsibilities, involved two sub-themes, namely other family members and work responsibilities.

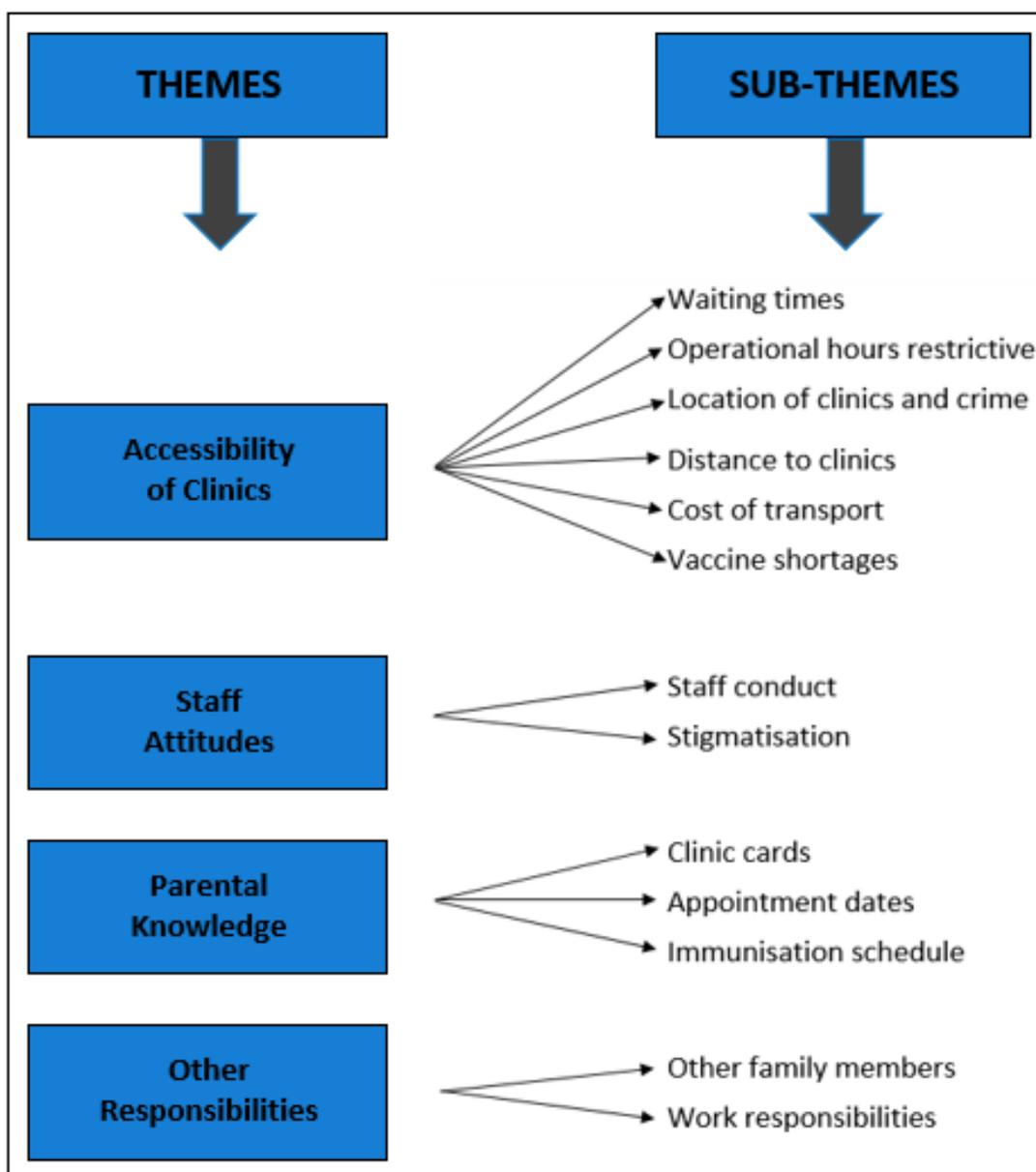


Figure 2.2: Schematic representation of the four main themes and their sub-themes that unfolded from the analysis of the interviews during this study.

4.3.1 Accessibility of clinics

Immunisation systems *per se* had been indicated as a major barrier to adherence by carers of children to the immunisation schedules, particularly the distances that they needed to travel to immunisation facilities and the standard of care being experienced at healthcare facilities. Some participants suggested that clinics were not easily accessible, mainly due to them having to arrive at the clinics early, before operational hours to prevent long queuing times. The entrances to the facility were then generally still locked, with no alternative waiting facilities.

“Dis die vroeg opstaan, suster, dan is jy heelyd buite in die koue te staan tot half agt toe. Ons staan al ses uur in die lyn, maar dan moet jy wag tot half agt toe in die koue. Dis hoekom die mense wil nie kliniek toe kom. Dan moet jy buite staan en wag.” (Participant 8).

Free translation:

‘It is the getting up early, sister, then you are standing in the cold until half past seven. We are standing in the queue at six o’clock already, but then you have to wait until half past seven in the cold. That is why people don’t want to come to the clinic. Then you have to stand outside (the clinic) and wait.’ (Participant 8).

It was evident from the above response that unfavourable experiences of carers, when visiting healthcare facilities, could impact negatively on future clinic attendances.

4.3.1.1 Waiting time

The time spent waiting at clinics before being assisted had been indicated as a major barrier to adherence to immunisation schedules. Participants became frustrated, which had a negative impact on their experiences of the clinics and upon honouring subsequent appointments.

The majority of participants complained about the long waiting hours that they had to endure on immunisation days, some indicating that they would arrive hours before the clinics’ doors opened. They could for example arrive at the clinics as early as 05h00 in the morning, and

only be assisted at 10h00. Participants further indicated that they had waited for as long as 6 hours to be assisted.

“I come five o’clock in the morning and I have to wait long.” (Participant 5).

“Ek het hier gekom so past eight vanoggend en past twelve was ek gehelp, maar net ek moes nou gewag het vir ‘n inspuiting.” (Participant 3).

Free translation:

‘I arrived around past eight this morning and past twelve I was helped, but I only had to wait for an injection.’ (Participant 3).

It was evident from the interviews that the long waiting periods at clinics caused frustration, as participants had no alternative, but to wait for assistance by the clinics’ nursing staff.

Furthermore, the long waiting times posed a problem towards attending clinics regularly, especially when other factors were present also, such as having two or more siblings and during winter. One of the participants, who had twins, had found it difficult to wait with two children for long periods at the clinic. Carers with one or more siblings attending the clinics experienced the long hours as demanding on the children, resulting in restlessness.

“Yes, and you’ve got kids who are nagging because kids are always like, they’re always uneasy when you are at one place, because now even my kids were also like telling me, mama, when are we going home.” (Participant 6).

A similar view was shared by another participant, as quoted below.

“Maar om lank te sit by ‘n kliniek is moeilik, ‘special’ saam die kinders. Hulle raak baie moeilik as hulle heeldag moet sit en lank wag en so.” (Participant 3).

Free translation:

‘But to sit for a long time at the clinic is difficult, especially with the children. They become very difficult if they have to sit the whole day and wait for a long time.’ (Participant 3).

The above findings indicated that although participants had arrived early at the clinics, they still had to wait for hours, before being assisted by clinic staff. Moreover, a reduction in time would encourage participation and compliance to the immunisation schedules.

A few participants expressed their understanding regarding the long waiting hours, stating that there were many patients to attend to, with only a few staff members coping with the heavy workloads at the clinics. They did not complain and waited patiently for their turn to be assisted.

“Yes, I, you know, I’m bored. At least they try to go..., because there’s a lot of people, lot of people here, and the babies.” (Participant 7).

“Because that can also be a problem if you wait too long, and then you don’t want to come the next time...” (Participant 7).

The carers of children experienced long waiting times at most clinics, which demotivated them, resulting in carers not wanting to attend clinics for the immunisation of their children.

4.3.1.2 Operational hours restriction

Some of the participants revealed that they had to come to the clinics early, because at certain clinics they would not be assisted if they handed in their clinic cards later than the specified time in the morning. One participant informed us that she had to be at the clinic before 9h00 in the morning, or risk not being assisted for arriving too late at the clinic.

“Not any time, after nine, you didn’t take our card, clinic card, after nine, didn’t take it.” (Participant 2).

“... they won’t help you, they tell you to go, you can come back tomorrow.” (Participant 2).

In contrast, some participants disagreed and verbalised that their local clinics accepted patients throughout the day and that they would be assisted as far as possible. Clinics therefore seemed to have different operating hours and protocols.

“...hulle het tye gehad in die oggende van eight o’clock tot one o’clock, en van two o’clock weer tot four o’clock. So daar kon jy twee kante gegaan het. Jy kon in die oggend gegaan het, of in die middag gehad. Maar ek sien hier is mos net een tyd hierso, hulle het nie ‘n oggend of ‘n middag hier nie.” (Participant 3).

Free translation:

‘...they had times in the mornings from eight o’clock to one o’clock, and then from two o’clock to four o’clock. So there you could attend at two timeslots. You could attend in the morning, or in the afternoon. But I see here is only one time, they don’t have a morning, or afternoon here.’ (Participant 3).

Most participants commented that they would receive assistance, irrespective of their arrival times, but that those who arrived the earliest, would be assisted first.

“I come early in the morning, sometimes seven o’clock, or like today, I came around about nine o’clock, because I had that mindset, it’s full anyway, what’s the use of coming early in the morning, while I’m going to be served at eleven o’clock...” (Participant 6).

The above findings demonstrated that participants sometimes found it challenging to attend clinics, due to their operational hours and the long waiting times. Subsequently, participants realised that they had to be at the clinics early to ensure that their children were immunised.

4.3.1.3 Location of clinics and crime

Some participants responded that high levels of violent crime in their areas had prevented them from adhering to their appointment dates. Crime specifically related to gang violence, including regular shootings and innocent bystanders risking being injured, or killed by stray bullets. Participants expressed being too afraid to walk to the clinics when gang violence erupted, mainly for fear of being injured. The fear of being robbed, or attacked by gang members had also been identified as reasons for missing immunisation appointments at the clinics. One participant recalled that the clinic’s gates had been closed on a particular day

when gang violence erupted, while the security officer first had to screen patients, before allowing them entry. Some comments regarding gang violence were:

“Hulle skiet hier oor en weer oor die mense. Hulle worry nie, hulle skiet sommer hier.”
(Participant 8).

Free translation:

‘They shoot here across the people. They don’t care, they just shoot here.’ (Participant 8).

Another participant also mentioned that the area was known for violence, thus impeding access to the clinic.

“...dis skollies, daar is nou baie skollies. Nou partykeer, soos laas maand toe ek hier kom, toe hoor ek nou toe ek hier kom, toe is die hekke nou toe, buitekant en hier toe, is die hekke nou toe... want hulle skiet die jonge nou.” (Participant 4) (hampering).

Free translation:

‘...it’s gangsters, there are a lot of gangsters. Now sometimes, like last month that I came here, when I arrived I heard that the gates were closed, outside and here the gates were closed... because they were shooting at the youngster.’ (Participant 4).

The responses reflected upon how the participants experienced violence and crime as barriers to honouring immunisation appointments and their impact upon decreasing the likelihood of return visits by carers. Similarly, the long waiting times and clinics’ operating protocols impacted negatively on carers’ ability to adhere to their clinic dates, as evidenced through the above responses during the interviews.

4.3.1.4 Travel distance to the clinic

Most of the participants lived within walking distance of their local healthcare facilities and did not express any problems with regards to arriving at the healthcare clinics on time.

“I have to walk to the clinic, but I don’t stay that far from here, I’m not that far.”
(Participant 6).

In contrast, one participant lived far from the clinic, but had been using public transport to attend the healthcare facility.

“Ons vat altyd taxi, ons het nooit gestap nie.” (Participant 1).

Free translation:

‘We always take the taxi, we have never walked.’ (Participant 1).

It was evident from the responses that the travel distances to the nearest healthcare facilities were not a barrier for participants to adhere to their appointment dates.

4.3.1.5 Cost of transport

Participants, who lived far from their nearest clinics, had often made use of public transport, such as taxis, to arrive at their clinics on time. Although these taxi operators charged a minimal fee, it often was unaffordable to participants, who were either unemployed, or single parents. Consequently, participants who did not have the required transport fee, opted to walk to the clinics.

“Dit (taxi) is R3.00. Ja, suster, ek stap.” (Participant 8).

Free translation:

‘That (taxi) is R3.00. Yes, sister, I walk.’ (Participant 8).

“I have to walk to the clinic, but don’t stay that far from here, I’m not that far. No, I just walk to come here.” (Participant 2).

Although some of the participants indicated that there were minimal transport costs involved in obtaining vaccines, no participant mentioned any direct costs involved with obtaining vaccines at their respective healthcare facilities. The availability of transport money did not seem to pose a major barrier towards attending clinic appointments.

4.3.1.6 Vaccine shortages

Another key problem that was identified from the interviews was the shortage of vaccines that had been encountered at some of the healthcare facilities. Participants suggested that it was important to always have vaccines available at those institutions, as they (participants) had made the necessary arrangements to attend the clinics, as scheduled. The constant availability and secure supply of vaccines would increase participants' perception of adhering to appointments.

Only two participants responded that they had experienced problems with the availability of vaccines at their respective healthcare clinics.

"Ja suster, hulle het reeds vanoggend gesê hier is nie inspuitings vir sekere kinders nie..."

(Participant 8).

Free translation:

'Yes, sister, they have already said this morning that there are no injections available for certain children...' (Participant 8).

According to one participant, she had been waiting for her child's one year injection that was out of stock during her clinic visit, as he would turn a year old in September.

"...my baby moes sy jaar inspuiting gekry het, en hy word nou Septembermaand 'n jaar So, ek weet nie, hy het nog nie sy jaarinspuiting gekry nie..." (Participant 4).

Free translation:

'...my baby was supposed to get his year injection, he turns 1 year in September. I don't know, he has not yet received his injection ...' (Participant 4).

Similarly, another participant complained that she had returned as requested on her appointment date for the overdue vaccine, just to be informed that the vaccine had still been out of stock and was she given another appointment date.

"Yes, I did come back. They gave me another date." (Participant 5).

Fortunately, in contrast, the majority of participants never encountered a shortage of vaccines at their healthcare facilities.

“Every time I come, every time I come here, there’s always vaccines.” (Participant 7).

Some participants expressed their disappointment with being informed by clinic staff that vaccines were unavailable, when arriving on their scheduled appointment dates. This had led to frustration and increased the risk of participants not adhering to follow-up appointments.

“Nee hier is dit baie so. Hier is dit baie maal is dit hierso dan kom skel die ma’s maar, want hulle het nooit, hulle het baie min inspuitings...” (Participant 4).

Free translation:

‘No here it happens often. Is it like that, then the mothers complain, because they never have, they have very few injections...’ (Participant 4).

“This year, but I don’t know which month. I came, they said there were no needles. ... because I came so early and there were no injection.” (Participant 5).

It appeared that vaccines were mostly in stock at the majority of the healthcare facilities, but that the unavailability of stock continued to be an influencing factor that increased the likelihood of children not completing their immunisation schedules. Since participants had not timeously been informed about vaccine shortages, the risk of participants not returning for subsequent clinic appointments had increased.

4.3.2 Staff attitudes

The importance of staff attitudes with regards to empathy, conduct, skills and education are pivotal in supporting immunisation adherence. Participants were concerned about staff apathy and felt that the healthcare professionals had a responsibility to always assist them, even during their lunch breaks.

Overall, the prevailing sentiment amongst the participants were that clinic staff were valued and that most healthcare professionals had attempted to assist them when possible, without

being judgemental and disrespectful towards participants. This following comment attested to this:

“And there are some of those nurses, who will actually give you love, to go to an extreme that they will actually hug you and tell you that everything is going to be fine.”

(Participant 6).

In conclusion, positive interaction between healthcare professionals and carers would encourage participants to return for follow-up visits.

4.3.2.1 Staff conduct

Most of the participants revealed that healthcare professionals had treated them in a respectful and dignified manner, even when they had defaulted on the immunisation schedules.

“Hulle is nie onbeskof nie.” (Participant 8).

Free translation:

‘They are not rude.’ (Participant 8).

“Other than that, I am impressed with the staff here, they were never rude. I have an 8 year old daughter, she was also coming to this clinic, I never had any hassles...”

(Participant 6).

However, two participants had experienced rudeness and verbal abuse, as highlighted in the following responses.

“Yes, and she kept on shouting that you must wait, you must wait, stop making a noise, you know, pointing fingers...” (Participant 6).

The last quote indicated that some healthcare professionals’ conduct towards carers had been of an unprofessional nature, which would ultimately negatively impact on carers adhering to immunisation schedules.

4.3.2.2 Stigma of HIV/AIDS

The lack of confidentiality being associated with regards to the human immunodeficiency virus / acquired immunodeficiency syndrome (HIV/AIDS) statuses of babies at immunisation services clinics, was expressed by one participant, who alluded that the clinic cards were marked and highlighted to make it easier for individuals to identify which babies were HIV positive.

“Maar nou sien hulle daardie op, daardie highlightjie of dat, dat, nou lyk dit nou, ai shame, nie vir my nie, ek hou nie van so nie, sien, sister?” (Participant 4).

Free translation:

‘But now they see the highlighted note, then they say, shame, not for me, I don’t like it, you see, sister?’ (Participant 4).

The above response suggested that healthcare professionals should not be biased towards HIV/AIDS infected infants and that confidentiality should be improved, as this could influence the participants’ perceptions of service delivery and might it impact on the carers’ willingness to return for future appointments.

4.3.3 Parental knowledge

Participants had various opinions about immunisation and most had a lack of understanding of the purpose of the immunisation services, particularly with regards to vaccines and the beneficial impact that routine vaccination would have on disease prevention, which was identified as a major obstacle to adherence levels.

Several participants demonstrated a lack of knowledge regarding the importance of infant immunisation. Furthermore, participants had vague notions as to the purpose of vaccines, nor did they know which diseases could be prevented by vaccines, nor did they understand the relevance of adhering to the immunisation schedule.

"I understand that they are going to get vitamins, because when I brought, my twins they gave them vitamins for the first time and then they gave them needles..." (Participant 6).

Two more participants also displayed a lack of knowledge and insight regarding immunisation and the importance thereof, as reflected by the below quotes.

"Just because the card. I don't know why." (Participant 5).

"Niemand het vir my gesê hoekom nie." (Participant 1).

Free translation:

'Nobody told me why.' (Participant 1).

In contrast, those participants who had been knowledgeable about immunisation, demonstrated an understanding about what immunisation is and the purpose thereof. This was evident from the following responses:

"About immunisation, because it prevents a baby from diseases. When she goes like... measles, measles and what is it now? Like diseases, ma'am, so he can, he can, she, so that she or he cannot get sick so easily because of injection. He must get it, it's important to get immunisation, yes." (Participant 7).

"Ek dink dit is belangrik, self vir die kinders, want self die injections is om vir hulle te veg teen siekte, dan kry hulle dit nie so erg nie. Verstaan, want so as kinders nie hulle injections kry nie, dan raak hulle siek, dan kry hulle meer (clicking tongue), hulle raak meer sieker as die wat die injections gekry het." (Participant 3).

Free translation:

'I think it is important for the children self, because the injections help them to fight against illness, then they don't get it so bad. Understand, because if children do not get their injections, then they get sicker than those who got the injections.' (Participant 3).

These responses indicated that some carers were knowledgeable, while most participants had insufficient knowledge about the purpose and importance of immunisations, which could directly influence their eagerness to complete the immunisation schedules.

4.3.3.1 Clinic cards

Some participants were unable to correctly read and interpret their children's clinic cards. The majority of participants displayed a limited understanding with regards to interpreting the cards correctly and only checked for the next appointment dates written on the cards. Moreover, participants seemed to lack comprehension regarding the information on the clinic cards. This matter was confirmed by the following quotes.

"I'm going according to the time that's written there, but I was never, honestly, I was never explained anything about immunisation." (Participant 6).

"Just because the card. I don't know why." (Participant 5).

The above responses indicated that those participants, who were unable to understand the clinic cards, blamed the nursing staff for not informing and educating them. In contrast, other participants' responses showed a level of apathy and ignorance towards understanding the clinic cards. This was of concern and placed emphasis on the effectiveness of health education to improve carers' understanding of the significance of all the information contained on the children's clinic cards.

4.3.3.2 Appointment dates

The majority of the participants were unaware of the correct time schedules for immunisations and most of them simply checked the clinic cards for the follow-up appointment dates.

"According to their cards, they actually write a date where I should come back again, then I will know that I should come back in this date and at this month." (Participant 6).

A similar opinion was expressed by another participant, as shown below. Participants were unsure about the time frames being followed after each vaccination. Moreover, they could not tell the exact age at which their babies needed to receive their immunisations.

“I know from 6 weeks, and then I think 9 months. How many times did I bring...? Yes, 6, from 6 weeks, then I think 3 months, or 9?” (Participant 7).

One participant had missed her scheduled appointment and only visited the clinic later, because the child was ill. Fortunately, this particular visit also provided an opportunity for the healthcare staff to check and ensure that the baby’s immunisation status was up to date.

“Dan kom ek as sy siek raak of so.” (Participant 1).

Free translation:

‘Then I come if she gets sick or so.’ (Participant 1).

It was evident that some participants viewed the Road to Health Card as an appointment card only, with the majority utilising the Road to Health Chart as such. This in itself was a problem, but ultimately resulted in higher adherence levels.

4.3.3.3 Immunisations

None of the participants were aware of all of the different types of vaccinations that their babies had received. Some of the participants knew the names of a few of the vaccines, but did not know which preventable diseases the vaccines would protect their children from.

“Yes, it’s because it’s in the card. They don’t just, like I know, this 18 months is for measles, measles injection...” (Participant 7).

Furthermore, a few participants indicated that nursing staff had never taken the time to explain the different vaccines to them.

“They didn’t tell me about injections at 6 weeks.” (Participant 2).

Participants’ understanding of immunisation was blamed upon healthcare professionals not educating them on the importance of immunisation. This might reflect on the incorrect

delivery of information relating to immunisation by healthcare workers. In addition, participants had never asked what the indications for the vaccines were, nor against which diseases their babies would receive vaccination. Their responses suggested ignorance, as these participants fully trusted healthcare professionals to act professionally and in the best interest of their children.

“Honestly, I don’t, I don’t. I just always have that mind-set that it’s the doctor’s orders, he knows, or she knows what they are doing, I actually put my trust in the doctors, I don’t ask so many questions...” (Participant 6).

The above findings indicated that more should be done by management and clinic staff to protect children from adverse events.

4.3.4 Other responsibilities

The relationship between other responsibilities that influenced carers’ abilities to attend clinic appointments and its direct impact on immunisation services had been associated with increased levels of non-adherence to immunisation schedules.

Several participants indicated that they had often missed their scheduled immunisation appointments, due to other obligations. They had viewed and prioritised those as more important than to adhere to the immunisation schedules, which had directly resulted in defaulting on appointments.

One participant had a valid reason for not attending on the scheduled clinic day, as she had written examinations on that day. However, she still failed to follow-up on her appointment.

“The problem for me was that the date that they gave me, I was writing exams, so I couldn’t come.” (Participant 5).

It was evident that carers had often had to choose between their commitments towards adhering to the immunisation schedules, or participating in other tasks, which they had deemed more important.

4.3.4.1 Other family members

Single carers often have to care for other children at home also. These children require supervision, while carers attend the immunisation appointments. However, such supervision could be difficult to manage and arrange and may lead to defaulting on clinic appointments. In addition, carers are often unable to rely on their parents for support, as their parents are often ill and frail and also require care.

“No, she’s [mother] not able. She’s [mother] sick.” (Participant 5).

“Yes, [take] care of my mother, yes.” (Participant 6).

The findings confirmed that the majority of participants had seemed to have poor support systems at home, often being burdened with taking care of others, in addition to multiple responsibilities, such as cooking and cleaning.

4.3.4.2 Work responsibilities

Most participants were unemployed and single mothers. In addition, those participants, who were employed, struggled to cope with the demands at home, as well as with the pressure at work. This specifically related to long, non-flexible working hours, where it seemed difficult to obtain leave for 1 day in order to attend clinic appointments. As a result, this had financial implications, especially where participants were required to take unpaid leave to attend clinics, or even risk losing employment.

“That’s the reason why sometimes I fail to actually bring them, because I was the only one who was working, everything is on my shoulders...” (Participant 6).

“Yes, because it was strenuous and I was working like shifts, Sunday to Sunday.” (Participant 1).

Owing to the participants’ responsibilities, they were compelled to consider financial stability *versus* their children’s health and well-being. Consequently, it was easier to default on clinic appointments, when other more important and demanding responsibilities, such as remaining employed, had to be considered, *versus* missing a clinic appointment.

4.4 SUMMARY

In this chapter, the research results from this study were presented and discussed. Four themes emerged from the collected interview data.

According to the results, participants had difficulty with the waiting times and operating hours of clinics. The clinics were generally easily accessible, with gang related violence emerging as a contributing factor to non-adherence to immunisation schedules. Some participants experienced difficulties in attending clinics, due to work commitments and other responsibilities at home. Furthermore, staff attitudes mostly received positive responses, highlighting staff's professional conduct towards patient care.

Finally, only a few of the participants had some knowledge of the immunisation schedule and all responded that no one had informed them about the different vaccines that their babies would receive.

Chapter 5 ends with a discussion of the objectives of the study, the limitations of the study, the derived recommendations and the subsequent conclusion from the research outcomes.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

Chapter 5 draws conclusions concerning the perceptions of carers regarding non-adherence to the immunisation schedules at healthcare clinics. Four main themes with regards to reasons for non-vaccination emerged from the outcomes of this study, namely the accessibility of clinics, parental knowledge, other responsibilities and staff attitudes. These themes are now discussed in relation to the study objectives, with emphasis on possible recommendations and the limitations of this study. This chapter ends with a conclusion to the study.

5.2 DISCUSSION AND RECOMMENDATIONS

The aim of this study was to explore the perceptions of carers regarding non-adherence to immunisation schedules. The discussion in this chapter will draw conclusions from the study findings and is presented according to each study objective, reflecting relevance to the subsequent recommendations.

5.2.1 Objective 1: Explore carers' understanding of the immunisation schedule

The conclusions that have been drawn from this study offer support to the Health belief framework (Larson et al., 2014:2151). According to his model, factors, such as personal perception and social environment, are linked to the participants' lack of understanding of the immunisation schedule.

Furthermore, The Strategic Advisory Group of Experts (SAGE) confirmed that vaccine hesitancy could be influenced by multiple factors (see section 2.2, Health belief framework). They further state that individual and group influences are key determinants of vaccine

hesitancy, which include influences arising from personal perceptions with regards to vaccines, or influences from the social/peer environment (Larson *et al.*, 2014:2151).

The above facts were confirmed by the participants' responses, who lacked a clear understanding of the purpose and importance of vaccinations and the interpretation of the clinic cards, resulting in missed clinic appointments. Moreover, some participants attributed their lack of knowledge to the lack of adequate staff education, rather than their own actions, or ignorance. This was evident from the following quote: *"I'm going according to the time that's written there, but I was never, honestly, I was never explained anything about immunisation."* (see section 4.3.2.1). The association between the parental knowledge level regarding immunisation and the standard of healthcare education given by healthcare professionals has been described in different studies (Leask *et al.*, 2012:154). In this respect, these study findings indicated that the correlation between a parental lack of understanding and non-adherence to immunisation schedules was consistent with previous studies.

Throughout fieldwork visits, the researcher discovered that some of the prospective participants' babies had received some of their vaccines, which had not been recorded on their Road to Health Card. Their respective clinic folders were then checked, which reflected that the children's immunisation statuses were complete. In essence, the vaccines were hence administered, but healthcare staff failed to correctly record this in the respective Road to Health Card of the affected babies. As a result, such babies are at risk of receiving an overdose of vaccines, since some of the parents attend multiple immunisation clinics, depending upon the availability of carers and other factors, such as multiple households.

It remains the responsibility of both healthcare workers and carers to check whether a child's immunisation status is up to date, by utilising the Road to Health Card, or clinic record. Carers will appreciate the importance of checking the Road to Health Card regularly, if they also view the Road to Health Card as a tool to monitor the child's health. A study that was concluded in Lesotho indicated that carers who had understood the value of the Road to Health Card, had utilised the clinics more often and that their children had shown a better vaccination adherence status, compared to carers who had not understood the purpose of the Road to Health Card (Tarwa & De Villiers, 2007:1).

5.2.2 Objective 2: Determine the challenges that carers experience in the context of non-adherence to the immunisation schedule

The Health belief framework states that contextual influences, which include historic, socio-cultural, environmental and health systems, or institutional, economic and political factors, are key determinants of vaccine hesitancy (Larson *et al.*, 2014:2151). Therefore, this theory is presented in relation to the theoretical framework of SAGE (see section 2.2).

According to the reviewed literature, the reasons for incomplete immunisation can be divided into four main categories, namely the supply and access to services, family characteristics, parental knowledge and communication (Save the Children Foundation, 2012:20).

The most common reasons being cited for non-adherence to the immunisation schedule are complex and have multiple overlapping origins across themes. As a result, it is difficult to classify a particular factor with one specific theme. For example, one participant reflected upon the long waiting hours spent at the clinic (see section 4.3.1.1) that posed a problem for her, due to the hours away from work (see section 4.3.4). Additionally, the long waiting time had resulted from a shortage of staff, which in turn had resulted from violence near the clinic (see section 4.3.1.3).

The accessibility of healthcare facilities as a barrier had previously been associated with lower levels of adherence. Rainey *et al.* (2011:8215) concluded that immunisation systems had accounted for 45% of the total reasons for non-adherence being identified. The latter was confirmed during this study, as the majority of the participants responded negatively with regards to the accessibility of healthcare facilities, citing access to the clinics as a major barrier to compliance with appointments. Consequently, this could demoralise and demotivate carers, having a direct impact on decreased levels of adherence to immunisation schedules (Li & Taylor, 1991:1037).

Importantly, participants mentioned scheduled times for attendance at certain clinics, or the risk of being sent away (see section 4.3.1.2). Regardless the complex issue of non-flexible clinic hours, management need to further explore the operational protocols of healthcare facilities and their responsibility towards the community in respect of free service delivery.

The findings from this study revealed that violent crime could prevent carers from attending healthcare facilities. Moreover, only two participants described the occurrence of regular criminal activities, i.e. gang related violence, in the vicinity of the health facility, which had prevented access to the clinic (see section 4.3.1.3). In addition, gang violence and the associated fear of becoming a victim as a barrier to immunisation had not been previously reported. Although significant, this might be an area specific phenomenon that could pose difficulty to address. In Cape Town, staff are being victimised by gangs and do staff feel unsafe at clinics that are affected by gang violence, resulting in a shortage of staff, as no one is willing to risk their lives (ANA Reporter, 2015:1).

Some of these factors, such as long waiting times before the clinics open, long waiting times before being assisted and the crime incidences around clinics had been associated with healthcare facilities not being accessible to carers. Additional factors, such as the travel distances to the clinics and the indirect costs of vaccinations, e.g. taking public transport, appeared to have a minimal effect on immunisation adherence levels. In contrast, another study found the long travel distances to the clinics as one of the most common reasons for defaulting on immunisations (Snow, 2009:12). Many participants positively postulated that their healthcare facilities were within walking distance from their homes. In addition, this study suggested that carers were more likely to attend health facilities for immunisations, as the clinics were located within easy access. Similarly, the indirect costs associated with vaccinations were not found a reason for non-adherence to immunisation schedules.

The carers who participated in this study mostly consisted of unemployed and single mothers. As such, the financial burden, coupled with additional family responsibilities increased the stress levels of carers, especially when poor support systems existed. This was evident from the following phrase: *“That’s the reason why sometimes I fail to actually bring them, because I was the only one who was working, everything is on my shoulders...”* (see section 4.3.3.2).

Additional responsibilities, which included caring for other family members, siblings, as well as work related conditions, were also identified as factors effecting non-adherence to immunisation schedules (see section 4.3.4.1). Socio-economically, those factors have more of an impact at household level, as mothers view household responsibilities as important, compared to adhering to immunisation appointments and do they consequently perceive

clinic appointments as a lesser priority.

The availability of vaccines can impact on carers' perceptions with regards to adherence to the immunisation schedules. This study proved that the majority of clinics always had vaccines in stock. Vaccine shortages can cause frustrated carers to default on their next appointments and increase the likelihood of not returning for future immunisations (Favin *et al.*, 2012:229-238). Furthermore, the study confirmed that although most clinics had always had vaccines in stock, incidences of vaccine unavailability had occurred, as reported by two participants. However, clinic staff made the necessary arrangements for follow-up appointments.

The stigma associated with HIV/AIDS infected children had been highlighted as a barrier to receiving care and as a contributing factor towards non-adherence (Mahajan, Sayles, Patel, Remien, Ortiz, Szekeres, Coates 2008:1). It was evident that a correlation between confidentiality, disclosure of HIV/AIDS statuses and the effect on non-adherence to immunisation schedules existed, as reflected by the study findings.

The study findings indicated that health staff treated carers professionally and with the necessary respect and did no participants report the staff's attitudes as a reason for non-adherence to the immunisation schedule. In contrast, previous studies had listed poor staff attitudes as a contributing factor for non-adherence to the immunisation schedule (Favin *et al.*, 2012:229). A survey that had explored factors affecting patient satisfaction, found staff attitudes as being the main contributor towards patient satisfaction, further emphasising the importance of staff attitudes (Cheng-Larivee, 2012:1). This survey indicated that the attitudes of doctors and nurses had accounted for one-third of the overall experiences of patient satisfaction regarding service delivery, consequently encouraging some hospitals to explore and evaluate the behaviour of staff towards patients (Cheng-Larivee, 2012:1). Therefore, positive staff attitudes and professional conduct form essential components in promoting patient compliance and satisfaction.

In conclusion, the study proved useful in understanding the perceptions of carers regarding the factors that may influence non-adherence to immunisation schedules. In addition, the study findings assisted in characterising barriers to immunisation, reinforcing the need for targeted intervention strategies aimed at minimising any negative impacts on immunisation

adherence. Factors, such as the travel distances to the clinics, staff attitudes and the availability of vaccines provided no evidence that they had negatively impacted on the risk of non-adherence to immunisation schedules.

5.2.3 Objective 3: Determine possible solutions from the perspectives of carers

A couple of solutions were put forward by the participants. The possibility of home visits within a community was cited as a method to detect babies with an incomplete status. One participant revealed: *"... there was this car that was driving around, it's like the nurses who are actually checking cards and then if your child needs.... Or he or she is late, they will give you injection and the pills. I was so impressed with that."* This would afford healthcare workers the opportunity to ensure that the immunisation statuses of non-adherent babies are checked and corrected on site, or that alternative arrangements could be made to correct the outstanding vaccines. Simultaneously, healthcare workers could utilise the opportunity for healthcare education and emphasise the importance of adhering to the immunisation schedule.

The majority of reasons provided related to decreasing the waiting times at healthcare facilities. According to the Health belief framework mentioned in section 2.2, convenience plays a phenomenal role towards the access that individuals have in obtaining vaccines (Larson *et al.*, 2014:2151). This could be achieved through increasing the total number of available staff members to assist awaiting carers. According to a study that had been done in Springfield, the waiting time of patients had been reduced by employing more health staff in strategic positions, resulting in a significant improvement in the quality of care that patients received (Johnson, 2015:1).

Furthermore, healthcare staff, working in different departments, should strive to assist each other in an attempt to decrease the workloads of colleagues struggling in other departments. Consequently, this would have a direct impact on the total workload of staff and decrease the waiting times of patients.

In addition, participants raised their concerns about healthcare facilities implementing different timeslots for immunisation services for example, allow carers to attend the immunisation clinics at one of two available timeslots per day, with a morning and an afternoon slot. Moreover, this would afford carers the opportunity to make alternative arrangements in respect of other responsibilities, such as work related commitments and increase accessibility to the immunisation clinics. However, clinics are only operational 5 days per week for 8 hours per day and have to follow normative guidelines to ensure that all the operational needs of the facilities are efficiently met, with the available staff compliment (Workforce Department and Planning Cluster, 2015:10).

Interestingly, participants did not suggest the improvement of health education by healthcare staff. In addition, solutions relating to increased security measures to address the safety of carers and staff being affected by gang related violence were also not alluded to. This could imply tolerance on the part of carers and may have a bearing on the prevailing mood of the broader communities living in poor socio-economic conditions (Horowitz, 1987:473).

The Batho Pele principles clearly state that all citizens of South Africa are entitled to equal access to services, rendered by the government (Republic of South Africa, 1997:15). Equal services, such as a safe working environment for both staff and carers, need to be rendered at all clinics, irrespective of the area where the clinics are situated.

These proposed solutions have merit, but the feasibility and implementation thereof would need the input and collective commitment from all relevant multi-disciplinary parties involved, for example local community forums, the Department of Health, etc. It would also require optimal co-ordination between local government departments, healthcare staff, carers and communities to undertake to act on these solutions, which are based upon the carers' personal experiences of healthcare services.

5.3 LIMITATIONS OF THE STUDY

The study was conducted at public healthcare facilities of the Western Cape metropolitan area and excluded the wider population, who attend private healthcare facilities.

Consequently, participants attending private healthcare facilities might have different perceptions regarding non-adherence to the immunisation schedule.

Another limitation of the study was that the population sample mainly consisted of unemployed, single parents, residing in poor socio-economic conditions. This homogenous group of participants might not be a true reflection of all of the possible reasons for non-adherence, associated with carers living in different socio-economic conditions.

Lastly, participant responses had been identified as a limitation of this study, specifically relating to report bias. For example, with regards to questions relating to knowledge about immunisations, the majority of participants blamed healthcare staff for their lack of knowledge and failed to acknowledge their own lack of vigilance regarding immunisation information.

5.4 RECOMMENDATIONS

The following recommendations were made, based upon the carers' perceptions regarding non-adherence to immunisation schedules, in order to address and improve on the identified factors, which were found to have impacted on carers' adherence levels.

5.4.1 Staff development

The results revealed that healthcare workers had a pivotal role to play in the promotion and education of immunisation services.

This could be achieved through an increased awareness of healthcare staff towards the apparent lack of knowledge of carers and the direct association it has with an increased risk of non-adherence to the immunisation schedule and the importance thereof (Kimmel, Burns, Wolfe, Zimmerman, 2007:61). Furthermore, healthcare workers need to have up to date information regarding the immunisation schedule and vaccines, in order to adequately educate and address any concerns raised by carers (Department of Health, 2000:15). This pertains to assessing healthcare professionals' knowledge, skills and competences on current evidence-based immunisation practices.

Furthermore, emphasis should be placed on educating carers regarding the information being recorded on the Road to Health Card, in order to improve their understanding thereof (Tarwa *et al.*, 2007:49).

5.4.2 Communication

The results indicated that efficient communication was needed between carers and clinic health staff.

Communication regarding the immunisation schedule could be improved by displaying informative posters on immunisation in the waiting areas. In addition, carers could be influenced by providing and distributing regular leaflet updates regarding changes to the immunisation schedule, or information on the importance of upcoming vaccine drives. Carers could also be encouraged to participate in group sessions and mentorship programmes, which could emphasise adherence to the immunisation schedule.

Positive and effective communication between a healthcare worker and a patient would affect the outcome of healthcare information, promote understanding of the information and adherence to healthcare recommendations (Institute for Healthcare, 2011:1).

5.4.3 Health education

Health education is important for patients to effectively reach their recommended healthcare needs (Smeltzer & Bare, 2004:46).

The Batho Pele principles clearly state that citizens need to be informed about the service they are going to receive (Republic of South Africa, 1997:15). As a result, healthcare staff should be encouraged to promote healthcare education during consultations, focussing on educating carers regarding immunisation schedules and the importance of adherence. In addition, healthcare workers should also encourage patients to enquire about immunisations, thereby creating opportunities to educate carers and clarifying any misconceptions.

5.4.4 Policies

Appropriate policies need to be formulated and implemented at immunisation facilities, with the primary goal of improving carers' adherence to the immunisation schedule. Healthcare staff need to adhere to set tea and lunch breaks, whereby not all staff members take breaks at the same time, thus ensuring that sufficient operational staff are available at all times. According to the basic guide to working hours in South Africa, meal breaks must be 60 minutes after 5 hours of work (Zopedol, 2012:1).

Existing policies relating to the identification of babies, diagnosed with HIV/AIDS, need to be reviewed, especially with regards to displaying the babies' HIV/AIDS statuses in an obvious manner, or coding of their respective clinic cards (Blacksash, 2012:4).

The planning and implementation of communication strategies relating to immunisation systems, such as the long waiting times and operating hours at the clinics, would address carers' concerns and promote future clinic attendance (Department of Health, 2000:15).

5.4.5 Supportive environment

Improvement of the security measures at facilities to ensure the safety of patients, carers and healthcare staff members need to be considered. Although violence was not reported within facilities, an increased security presence at clinics might deter criminals from the immediate vicinity and promote adherence to appointments. According to grey literature, a Mayoral Committee Member of Health for the City of Cape Town, voiced out on gang violence. He stated that clinics, such as Hanover Park and Manenberg, had been forced to close early, due to shootings in the clinic's vicinity. According to him, staff at Wesbank clinic had been hijacked and threatened by gang members (ANA Reporter, 2015:1). Healthcare staff do not want to put their lives in danger and therefore they would rather work at clinics that are safer, which results in staff shortages at affected clinics. This affects service delivery at clinics, since patients have to wait longer to receive medical care.

5.4.6 Home visits

The strategic implementation of a home visit program, coupled with dedicated staff and community support would assist carers, who are unable to attend clinic appointments. A study that was done in Ethiopia concluded that house-to-house visits played an important role in increasing the oral polio vaccine uptake, indicating that home visits could have a positive impact on vaccine adherence (Curry, Perry, Tirmizi, Goldstein, Lynch, 2014:356).

5.5 CONCLUSION

The study explored the perceived perceptions of carers regarding non-adherence to the immunisation schedule. Three of the four main themes that were identified, correlated with previous study results. These themes were associated with the inaccessibility of clinics, the lack of parental knowledge and other responsibilities of carers. This was indicative thereof that different demographical and socio-economic factors were at play, which influenced the identified reasons for non-adherence to the immunisation schedule.

This study provided convincing evidence that suggested that the reasons being identified as barriers to adhering to immunisation schedules, had related more to the demand for immunisation services, than to health service system related factors of immunisation service delivery in general.

The study also highlighted that healthcare clinics were mostly located within walking distances of carers, that the attitudes of healthcare workers towards carers were professional and that vaccine stock shortages were not a major barrier to immunisation adherence levels. In contrast, previous studies concluded that the distance to clinics, as well as the attitudes of healthcare workers had had negative effects on carers' perceptions of health facilities and future appointment dates.

Another important observation that emerged from this study related to the evidence of gang related violence and crime, which had impacted negatively on carers' immunisation adherence levels. Further exploration of the relationship between access to healthcare and gang related violence is needed to fully understand the affect that violence has on healthcare service delivery.

This study revealed that healthcare education should be prioritised and that focussed attention should be given to educate both healthcare workers and carers. Healthcare workers should be encouraged to use every consultation as an opportunity to promote and advocate immunisation adherence. Furthermore, carers should be engaged to be more vigilant in taking responsibility concerning immunisation services and the importance thereof.

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APPENDIX A

SEMI-STRUCTURED INTERVIEW GUIDE

TITLE: The perceptions of carers regarding non-adherence to immunisation schedule.

INTERVIEW GUIDE:

1. Tell me in your own words what immunisation means to you (understand).
Probing words: role, importance, indication, value/meaning.
2. What can you tell me in your own words about the immunisation schedule?
Probing words: meaning/understanding of schedule, how often, in what sequence, why necessary/important to complete schedule.
3. What are the things (reasons) that make it difficult for you to make sure that the child gets the immunisation on time?
Probing words: problems you may have to adhere to schedule, for example transport, finances, time constraints.
4. What would make it easier for you to adhere to the schedule?
Probing words: things that will help/support you, for example immunisation information, staff attitudes, waiting time.

APPENDIX B

CONSENT FORM AND INFORMATION LEAFLET

PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM

TITLE OF THE RESEARCH PROJECT: The perceptions of carers regarding non-adherence to immunisation schedule

REFERENCE NUMBER:

PRINCIPAL INVESTIGATOR: Bridgette Lockett

ADDRESS: 83 Midas Crescent, Northpine, Brackenfell

CONTACT NUMBER: 084 502 8340

You are being invited to take part in a research project. Please take some time to read the information presented here, which will explain the details of this project. Please ask the study staff any questions about any part of this project that you do not fully understand. It is very important that you are fully satisfied that you clearly understand what this research entails and how you could be involved. Also, your participation is **entirely voluntary** and you are free to decline to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part.

This study has been approved by the **Health Research Ethics Committee at Stellenbosch University** and will be conducted according to the ethical guidelines and principles of the international Declaration of Helsinki, South African Guidelines for Good Clinical Practice and the Medical Research Council (MRC) Ethical Guidelines for Research.

What is this research study all about?

The study will be conducted in the Eastern sub-district of Cape Town in the Western Cape. Four governmental clinics will be used in the research with two participants at each clinic.

The aim of this project is to explore why carers of babies do not follow the required immunisation schedule. The reason for doing this project is to increase good quality of healthcare and to help in decreasing the number of baby deaths.

Interviews will be held with participants. The interviews will not last more than 1 hour. An audio tape recorder will be used to record the interviews. Pseudonyms will be used during the interviews to maintain confidentiality.

Why have you been invited to participate?

Carers of babies between the ages of 9 – 18 months that did not complete the compulsory immunisation schedule are invited to take part in this project.

What will your responsibilities be?

Your responsibility will be to answer the questions as clearly and truthful as possible during the interview.

Will you benefit from taking part in this research?

Babies that need to complete the vaccination schedule will benefit in future from this project.

Are there any risks involved in your taking part in this research?

There are no risks involved in taking part in this research.

If you do not agree to take part, what alternatives do you have?

If you decide not to take part in this research you might be willing to take part in future research regarding this topic.

Who will have access to your medical records?

During the interviews pseudonyms will be used to maintain confidentiality. After the interviews the tape recordings will be kept locked in a safe place for a period of 5 years. The tape recordings will only be accessible to the researcher and supervisor. No real names will be used when the thesis is presented.

What will happen in the unlikely event of some form of injury occurring as a direct result of your taking part in this research study?

If necessary, the researcher will arrange for counselling for participants who appear to be very emotional during the interview about this topic.

Will you be paid to take part in this study and are there any costs involved?

You will not receive any payment and will there be no costs involved for you, if you do take part.

Is there anything else that you should know or do?

- You can contact the Health Research Ethics Committee at 021 938 9207 if you have any concerns or complaints that have not been adequately addressed by the researcher.
- You will receive a copy of this information and consent form for your own records.

Declaration by participant

By signing below, I agree to take part in a research study entitled “*The perceptions of carers regarding non-adherence to immunisation schedule*”.

I declare that:

- I have read or had read to me this information and consent form and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions and all my questions have been adequately answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.
- I may be asked to leave the study before it has finished, if the study doctor or researcher feels it is in my best interests, or if I do not follow the study plan, as agreed to.

Signed at (*place*) on (*date*) 2015.

.....
Signature of participant

.....
Signature of witness

Declaration by investigator

I (*name*) declare that:

- I explained the information in this document to
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above.
- I did/did not use an interpreter. (*If an interpreter is used then the interpreter must sign the declaration below.*)

Signed at (*place*) on (*date*) 2015.

.....
Signature of investigator

.....
Signature of witness

Declaration by interpreter

I (*name*) declare that:

- I assisted the investigator (*name*) to explain the information in this document to (*name of participant*) using the language medium of Afrikaans/Xhosa.
- We encouraged him/her to ask questions and took adequate time to answer them.
- I conveyed a factually correct version of what was related to me.
- I am satisfied that the participant fully understands the contents of this informed consent document and has had all his/her questions satisfactorily answered.

Signed at (*place*) on (*date*) 2015

.....
Signature of interpreter

.....
Signature of witness

APPENDIX C

ETHICAL APPROVAL FROM STELLENBOSCH UNIVERSITY



UNIVERSITEIT STELLENBOSCH-UNIVERSITY
JOB KENNISVERMOEEN • YOUR KNOWLEDGE PARTNER

Approval Notice New Application

12-Dec-2014
Lockett, Bridgette B

Ethics Reference #: S14/10/203

Title: The perceptions of carers regarding non – adherence to immunization schedule.

Dear Miss Bridgette Lockett,

The New Application received on 10-Oct-2014, was reviewed by members of Health Research Ethics Committee 1 via Expedited review procedures on 12-Dec-2014 and was approved.

Please note the following information about your approved research protocol:

Protocol Approval Period: 12-Dec-2014 -12-Dec-2015

Please remember to use your protocol number (S14/10/203) on any documents or correspondence with the HREC concerning your research protocol.

Please note that the HREC has the prerogative and authority to ask further questions, seek additional information, require further modifications, or monitor the conduct of your research and the consent process.

After Ethical Review:

Please note a template of the progress report is obtainable on www.sun.ac.za/rdc and should be submitted to the Committee before the year has expired. The Committee will then consider the continuation of the project for a further year (if necessary). Annually a number of projects may be selected randomly for an external audit.

Translation of the consent document to the language applicable to the study participants should be submitted.

Federal Wide Assurance Number: 00001372
Institutional Review Board (IRB) Number: IRB0005239

The Health Research Ethics Committee complies with the SA National Health Act No.61 2003 as it pertains to health research and the United States Code of Federal Regulations Title 45 Part 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 2004 (Department of Health).

Provincial and City of Cape Town Approval

Please note that for research at a primary or secondary healthcare facility permission must still be obtained from the relevant authorities (Western Cape Department of Health and/or City Health) to conduct the research as stated in the protocol. Contact persons are Ms Claudette Abrahams at Western Cape Department of Health (healthaes@pgwc.gov.za Tel: +27 21 483 9907) and Dr Helene Visser at City Health (Helene.Visser@capetown.gov.za Tel: +27 21 400 3981). Research that will be conducted at any tertiary academic institution requires approval from the relevant hospital manager. Ethics approval is required BEFORE approval can be obtained from these health authorities.

We wish you the best as you conduct your research.
For standard HREC forms and documents please visit: www.sun.ac.za/rdc

If you have any questions or need further assistance, please contact the HREC office at 219389156.

Included Documents:

CV A van der Merwe
Participant Information and Consent Form
Checklist
Declarations



CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

CITY HEALTH

Dr H el ene Visser
Manager: Specialised Health

T: 021 400 3981 F: 021 421 4894 M: 083 298 8718
E: Heleno.Visser@cape.gov.za

2015-04-23

Re: Research Request: The perceptions of Carers regarding non-adherence to immunisation schedule (ID NO: 10488)

Dear Ms Lockett,

Your research has been approved as per research protocol for the following clinics only.

Eastern Sub District: Eerste River, Blue Downs, Wesbank and Dr Ivan Toms Clinics
Contact: People Dr P Nkurunziza (Sub District Manager)
Tel: (021) 850-4315 / 084 800 0644
Mrs T de Villiers (Head: PHC & Programmes)
Tel: (021) 850-4312

Please note the following:

1. All individual patient information obtained must be kept confidential.
2. Access to the clinics and its patients must be arranged with the relevant Managers such that normal activities are not disrupted.
3. A copy of the final report must be sent to the City Health Head Office, P O Box 2815 Cape Town 8001, within 6 months of its completion and feedback must also be given to the clinics involved.
4. Your project has been given an ID Number (10488). Please use this in any future correspondence with us.
5. No monetary incentives to be paid to clients on the City Health premises.

Thank you for your co-operation and please contact me if you require any further information or assistance.

Yours sincerely

DR G H VISSER
MANAGER: SPECIALISED HEALTH

cc: Dr Nkurunziza & Ms de Villiers
Dr Jennings

CIVIC CENTRE IZIKO LOLUNGU BURGERSENTRUM
HERTZOG BOULEVARD CAPE TOWN 8001 P O BOX 2815 CAPE TOWN 8000
www.cape.gov.za

Making progress possible. Together.

APPENDIX D

DECLARATION BY THE LANGUAGE EDITOR

DECLARATION BY LANGUAGE AND TECHNICAL EDITOR

I, Julia Handford, herewith declare that I have language edited and technically edited the thesis of **Bridgette Lockett** that is entitled: "**The perceptions of carers regarding non-adherence to immunisation schedule**".

Yours truly,



Signature and credentials of language editor

JULIA S HANDFORD [MBA, BCom (Acc), BSc (Hons), HED]

Date: 23 August 2016