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BIODIVERSITY OF TERRESTRIAL SMALL MAMMALS ALONG AN ALTITUDINAL TRANSECT IN THE WESTERN SOUTPANSBERG, LIMPOPO PROVINCE, SOUTH AFRICA

BY

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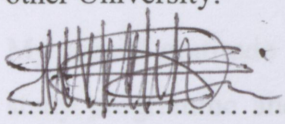
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DECLARATION

I, Munyai Aubrey declare that this thesis is my own, unaided work. It is being submitted for the Degree of Master of Environmental management at the University of the Venda, Thohoyandou. It has not been submitted before for any degree or examination in any other University.



.....

Signature of candidate

20 day of June 2013

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DEDICATION

This research is dedicated to my son Mukatuni Aubrey Munyai

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ABSTRACT

This study was aimed to investigate patterns and causes of changes of terrestrial small mammal species diversity, richness and abundance with increasing elevation in the Soutpanberg Mountains. Capture mark recapture method was conducted at five altitudinal sites ranging from 1000-1747m above sea level in the southern slopes of the western Soutpansberg. Data on different environmental variables (Microhabitat and climate) were collected. Twelve small mammal species was recorded, of these two species of shrew, nine rodents and one species of Sengi. Three rodent species e.g. *Micaelamys namaquensis, Aethomys ineptus* and *Rhabdomys pumilio* were the most abundant species occurring in almost all altitudinal sites. Six models were built to test influence of different environmental variables on small mammal. Akaike's information criterion (AIC) was used to assess the best model that explained variation in species richness, diversity and abundance. Model has shown that variation small mammal species richness and diversity was attributed to rockiness of the area. Small mammal species richness significantly increase with increase in altitude, species diversity also increase with altitude but it was not statistically significant dominance of *R. pumilio* at high altitude. Rock cover significantly influences the variation of three small mammal species (*Rhabdomys pumilio, Aethomys ineptus and Elephantulus myurus*). Analysis of variance (ANOVA) was performed to test if there any significant difference of four small mammal (*A. ineptus, M. namaquensis, R. pumilio and E. myurus*) body mass with changes in altitude. Altitude significalty influences variation of A. ineptus body mass but not in way predicted by Bergmanns' Rule. The results have shown that all four small mammals tested did not conform to Bergmann rule.

Keyword: *Small mammal, species richness, species diversity, altitude*

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CHAPTER 1

INTRODUCTION

1.1 Background to the study

Factors that regulate patterns of species assemblage structure, diversity and spatial distribution have been a matter of debate in ecology (Gaston, 2000; Zhou and Ma, 2000). Species assemblage structure results from different processes which vary in the scale in which they operate, both local and regional (Williams *et al*., 2002). At a regional scale, historical processes include geology, past shifts in climatic condition and evolutionary processes such as speciation and regional extinction (Clausnitzer and Kityo, 2001) whereas at a local scale these processes *inter alia* include competition, ecological variability and resource productivity (Schluter and Ricklefs, 1993).

This study focused on terrestrial small mammals which by definition are free-living, small, non-flying mammals and consist of species in the Orders Eulipotyphla, Macroscelidea, Afrosoricida and Rodentia (Mugatha, 2002). These groups share biological as well as ecological features associated with their body size, and they also feed continuously in order to sustain their relatively high metabolic rate (Avenant and Cavallini, 2007). Small mammals are generally known to have to a high reproductive rate as well as a short life expectancy (Corominas, 2004, Avenant and Cavallini, 2007; MacFadyen, 2007; Haveron, 2008).

Order Rodentia: the term rodent is derived from the Latin word *rodere* which means to gnaw (Skinner and Chimimba, 2005). This group can be easily distinguished by two overlapping incisors on the upper and lower jaws; although their incisors grow continuously they are normally kept short by gnawing (Apps, 2000). The Pygmy Mouse (*Mus minutoides*) is the smallest rodent in southern Africa whereas Cape porcupine (*Hystrix africaeaustralis*) is the largest (Monadjem, 1999). Rodents are the largest group of mammals and they occur on all continents except Antarctica (Skinner and Chimimba, 2005). There are about nine families and eighty species of rodents in the southern African subregion (Skinner and Chimimba, 2005).

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Order Eulipotyphla: Shrews are one of the groups of [illegible] represented under this Order. They are recognised by their long snout and small eyes. Four genera and eighteen species occur in the southern African subregion (Skinner and Chimimba, 2005). The Forest shrews e.g *Myosorex varius* are an example of a species under the order Eulipotyphla. They are found in most parts of South Africa i.e. Mpumalanga, KwaZulu-Natal, North West, Gauteng and in the Soutpansberg, Limpopo Province.

Elephant shrews (Order Macroscelidea) have long hind legs to enable them to move at high speed. Elephant shrews are known to be monogamous (Ribble and Perrin, 2005; Skinner and Chimimba, 2005). They are common in South Africa but never occur in large numbers. *Elephantulus myurus* prefers rocky habitat (Skinner and Chimimba, 2005).

Small mammals are essential components in the functioning of ecosystems because they are important in the recycling of soil nutrients, in habitat modification and in food chains (Armstrong and van Hensbergen, 1996, Mugatha, 2002). Small mammals are also agricultural pests (Makundi *et al*., 2007; Makundi and Massawe, 2010; Taylor *et al.,* 2012) and pose a threat to human health as the carry pathogens (Wube, 2005; Margaletic *et al*., 2005; Butet *et al.,* 2006; Jing-Yuang *et al*., 2008; Taylor *et al*., 2008).

Mountainous ecosystems are of great significance as they provide a platform for understanding small mammal species replacement and changes in species diversity along altitudinal gradients (Goodman *et al*., 1996; Patterson *et al*., 1998; McCain, 2005; McCain and Colwell, 2011). Variations of temperature along the altitudinal gradient at the study site also afforded an opportunity to test the eco-geographical rule of Bergmann (Bergmann, 1847 cited in Blackburn and Hawkins, 2004) as it applies to small mammals. Bergmann's rule suggests that species inhabiting colder environments have a higher body mass than those in warm areas (Myer, 1963, Smith *et al*., 1998).

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1.2 Statement of the research problem

The specific attributes that influence small mammal biodiversity and distribution have not been studied in the Western Soutpansberg Mountain. Altitude and assumed associated differences in temperature and precipitation (rainfall and mist) are probably the most important direct and indirect factors in a mountain environment and the study aimed to assess these influences. Knowledge of these factors is also important for an assessment of the future impacts of climate change.

1.3 Aims

- To determine and explain variation in terrestrial small mammal species diversity and species composition with increasing elevation in rocky habitat on the southern slopes of the Western Soutpanberg Mountain, Limpopo Province, South Africa.
- To test Bergmann's rule within four small mammal species (e.g *Micaelamys namaquensis, Aethomys ineptus, Rhabdomys pumilio* and *Elephantulus myurus).*

1.4 Specific objectives

- To determine the species composition of small terrestrial mammals in rocky habitats on the southern slopes of the Western Soutpansberg Mountain.
- To determine the altitudinal ranges of small terrestrial mammals on the southern slopes of the Western Soutpansberg Mountain.
- To compare the trap success and population structure of small terrestrial mammal species at different altitudes on the southern slopes of the Western Soutpansberg Mountain.
- To determine species richness and diversity at different altitudes on the southern slopes of the Western Soutpansberg Mountain.
- To explain differences in altitudinal ranges, relative and absolute abundance, diversity and species richness based on the influence of environmental factors such as litter cover, temperature and rainfall.

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- To determine whether Bergmann's Rule applies to small mammal species (e.g *Micaelamys namaquensis, Aethomys ineptus, Rhabdomys pumilio* and *Elephantulus myurus*).

1.5 Research hypotheses, relating to small mammals on the southern slope of the Western Soutpansberg

- Generalists and savannah habitat specialists dominate lower elevation and high-altitude montane endemics dominate on the higher slopes.
- Small mammal species richness in the Western Soutpanberg Mountan is expected to have peak at mid-elevation (McCain, 2005).
- Theory predicts (Field *et al.,* 2009) that species richness is positively related to climatic productivity (e.g high rainfall).
- Theory predicts that species richness is correlated with habitat heterogeneity (Qian *et al.*, 2009).
- Small mammal species (e.g *Micaelamys namaquensis, Aethomys ineptus, Rhabdomys pumilio and Elephantulus myurus*) comply with Bergmann's rule in the Soutpansberg Mountain, where body mass is expected to increase with altitude due to thermoregulatory advantages for large animal in reducing heat loss at colder temperature (because of smaller surface: volume ratio).

1.6 Justification

Knowledge of factors that regulate the biodiversity of small terrestrial mammal is important for the conservation management of mountain ecosystems (Bond *et al.*, 1980; Avenant and Kuyler, 2002; Madsen *et al.,* 2006; Stanley *et al.*, 2007). Small mammals from the orders Afrosoricida and Eulipotyphla (previously grouped under Insectivora) dominate the list of threatened mammals based on the most recent South African IUCN Red List assessment (Friedmann and Daly, 2004). This information may serve as a guide to conservation managers of the Vhembe Biosphere Reserve when developing this reserve to ensure the survival of small mammals.

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This study also provides critical baseline data for future monitoring studies; for example the effects of human-induced disturbances (Avenant, 2000) and climate change on small mammals (Moritz *et al.,* 2008). This information on small mammal biodiversity and distribution in the Soutpansberg Mountain would be of significance to the general public, conservationists and biodiversity scientists.

Small mammals are vulnerable to any kind of alteration of their habitat and as such they are considered to be potential indicators for environmental change (Avenant, 2000; Avenant and Kuyler, 2002; Avenant, 2005; Zhou and Ma, 2002; Giere and Zeller, 2005; Haim *et al*., 2005; Mugatha, 2005; Mohammadi, 2010). Small mammals assessments are now acknowledged as cost-effective practical approaches for assessing and monitoring environmental impact as well as providing information that could be used for environmental rehabilitation of degraded landscapes (Giere and Zeller, 2005; Peterson, 2006; Avenant and Cavallini, 2007, Jing-Yuang *et al*., 2008).

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CHAPTER 2

LITERATURE REVIEW

2.1 Habitat preferences of South African small mammals

Hall *et al*., (1997) defined habitat as the resources and conditions in an area that produce occupancy and allow organism to survive. Small mammals may select a specific habitat depending on their needs to meet their requirements for feeding, protection, sociality, reproduction and physiology (Haveron, 2008). Small mammals habitat preferences may also differ from one species to the other, for example, *E. myurus*, Namaqua rock mouse (*A. namaquensis)*, Spiny mouse (*Acomys spinosissimus)* and Rock dormouse (*Graphiurus platyops)* mostly prefer rocky habitat (Ribble and Perrin, 2005; Skinner and Chimimba, 2005), while species such *M. varius*, Vlei rat (*Otomys irroratus)* and African marsh rat (*Dasymys incomtus*) have a preference for wetland habitats such as marshes and riverine ecosystems (Skinner and Chimimba, 2005; Taylor, 1998).

Other rodent species such as the Natal multimammate mouse (*Mastomys natalensis)* are known to be habitat generalists and live in a diverse range of habitats from arid environments to moist grassland ecosystems (Fuller and Perrin, 2001). Some rodent species such as Woodland dormouse (*Graphiurus murinus)* and Woodland thicket rat (*Grammomys dolichurus*) are arboreal and spend much of their foraging time as well as breeding in trees (Skinner and Chimimba, 2005; MacFadyen, 2007).

2.2 Abiotic factors and small mammals

2.2.1 Response of small mammals to changes in climate

Along an altitudinal gradient, temperature changes over a small increase and most studies have shown that temperature usually decreases with altitudinal gain (Md Nor *et al*., 2001; Barry, 2008). On Mount Nuang, Malaysia, small mammal species diversity decreased as temperature decreased with an increase in altitude (Md Nor *et al.,* 2001). Temperature affects

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the physiological and the behavioural performance of endotherms; most species function well at moderate temperatures and performance decreases as temperature moves away from the optimum (Navas, 2003).

Changes in climate at higher altitude influence habitat characteristics and structure which also influences small mammal distribution and diversity (Md Nor *et al,* 2001). Small mammals search for thermal refuges by hibernating in burrows, climbing trees and hiding under rocks during cold and extremely hot condition (Mugatha, 2002; Haim *et al*., 2005; Lawes and Perrin, 1995).

Nonetheless, many small mammals are active during the night to avoid dehydration due to high day temperatures in summer (Lawes and Perrin, 1995), whereas others avoid extremely cold temperature by entering into torpor (Lawes and Perrin, 1995; Mzilikazi and Lovegrove, 2004; Schradin *et al*., 2007). Torpor is perhaps a mechanism of conserving energy and dealing with food shortage (Skinner and Chimimba, 2005). As a way of surviving with cold conditions small mammals also gain body temperature by exposing their body to the sun (Mzilikazi *et al.,* 2002).

Rainfall also often changes with altitude (Md Nor *et al.,* 2001), therefore high rainfall is associated with increased plant productivity, resulting in dense vegetation cover and high densities of seeds which could also lead to high insects diversity (Rowe-Rowe and Meester, 1982; Rowe-Rowe 1994; Monadjem and Perrin, 1997; Monadjem and Perrin, 2003; Corominas, 2004), and this results in an increase in food availability for granivorous small mammals (Bond *et al*., 1980; Corominas 2004). Rainfall influences the distribution of small mammals. Population density of two sibling species *M. natalensis* and *Mastomys coucha* increases during the rainy season (Venturi *et al.,* 2004; Makundi *et al.,* 2005).

In the western Usambara Mountains in Tanzania, some species showed high abundance during the season with most precipitation and a decline during the dry season (Makundi *et al.,* 2006). In Lesotho, *M. varius* predominates at higher altitudes with high rainfall whereas in the Eastern Cape, South Africa lowest population densities of *M. varius* were found in populations located at lower altitudes (Baxter unpublished data; Lynch, 1994).

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Seasonal variation can also affect the distribution of small mammals mainly due to variation of important resources such as food. Home ranges of some small mammals are also known to vary from one season to the other depending on the availability of food; where food become less abundant home ranges expand and opposite trends can be observed when the food is abundant (Schradin and Pillay, 2006).

In order to exist, small mammals may disperse to areas with temporary favourable environmental conditions, for example a mild climate and increased food availability (Corominas, 2004; Mugatha, 2005; Schradin and Pillay, 2006). In the process of migration between habitats the vulnerability of these small mammals to predation may also be enhanced (Shradin and Pillay, 2006).

Climate change poses serious threat to montane biodiversity (Parmesan, 2006). It has been suggested that the manner in which species respond to climate change differ among different taxa. Some species may benefit and others may be negatively affected under the context of global climate change (Erasmus *et al*., 2002). These impacts are likely to be more noticeable in the tropical mountainous ecosystems. Most species in the tropics are living within their thermal tolerance range so slight changes in temperature may have profound impacts (Hughes, 2000).

Mountain ecosystems might offer refuge for small mammals in the course of climate change (Clausnitzer and Kityo, 2001). In response to climate change, small mammals species disperse to higher altitude where they are tracking favourable environmental conditions, i.e. cool temperatures (Hughes 2000; Clausnitzer and Kityo, 2001; Corominas, 2004; Parmesan, 2006; Mulungu *et al.,* 2008). This upward shift was also observed for small mammals in Yosemite National Park (Moritz *et al*., 2008). Species which are endemic to higher altitude are more likely to be vulnerable to high extinction risk as they may not be able to migrate further (McCain and Colwell, 2011).

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2.2.2 Habitat filtering and small mammals

Heterogeneous vegetation which is normally characterized by several foliage profiles are known to increase diversity of rodents (Fuller and Perrin, 2001), whereas homogenous stands of vegetation are found to be low in small mammal diversity and abundance (Avenant, 2000). Several studies have found that habitats with much ground cover tend to support high diversity of small mammals as compared to open habitat (Bond *et al*., 1980; Monadjem and Perrin, 1997; Monadjem, 1999; Avenant, 2000; Fuller and Perrin, 2001; Mugatha, 2002; Silva *et al.,* 2005; Muck and Zeller, 2006).

In the Drakensberg Mountains for example, it was found that different vegetation types are associated with the changes in altitude which therefore had an influence on distribution of small mammals (Armstrong and van Hensbergen, 1996; Rowe-Rowe and Meester, 1982). Other studies have also indicated interrelationship of vegetative characteristics and small mammals (McCain, 2005; McCain, 2007). Vegetation cover is given preference by small mammals; studies have suggested that vegetation cover provides protection and shelter against predators as well as extreme climatic condition (Perrin and Johnson, 1999; Torre and Diaz, 2004; Muck and Zeller, 2006).

2.2.3 Species area relationship and small mammals

Small mammal species diversity may be influenced by area or size of a habitat (Avenant and Cavallin, 2007). Habitat size appeared to have a positive relationship with species richness and abundance (Bruun, 2001; Nee and Cotgreave, 2002; Allen and White, 2003). There is a general consensus in ecology that larger areas host a greater number of species than small areas, as shown by studies on invertebrates (Sanders, 2002). This has also been supported by traditional theory of island biogeography (MacArthur and Wilson, 1967). Area usually decreases with elevation (Lomolino, 2001), these have been as result steepness of slopes and erosive forces which normally produce isolated conical landscape (Brown, 2001).

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2.3 Biotic factors and small mammals

2.3.1 The role of predation on small mammals

Diurnal birds of prey, nocturnal owls, snakes and mammalian predators are the main predators of small mammals (Shradin and Pillay, 2005). Small mammal population density may also be shaped by presence and abundance of the predators living in the area. Predation controls the number of prey and can affect small mammals by physically removing some individuals from the population (Torre and Diaz, 2004). Small mammals are even thought to decrease their foraging activities in the presence of predators (Brown and Kotler, 2004). Studies have even suggested that the presence of small mammal predators such as *Genetta genetta* had a negative impact on the spatial distribution and microhabitat use of small mammals (Corominas, 2004).

In addition, monitoring diet over seasons found in pellets of a Barn Owl (*Tyto alba*) has reflected the diversity of small mammals consumed (Corominas, 2004). Studies have shown that predation pressure by Barn owl varies with season with a higher demand for food in winter than summer. It was also found that rodents constituted a larger proportion of the food consumed (Glenny, 2005, Avenant, 2005). Barn owls eat enormous amounts when feeding young.

Furthermore, the phases of the moon also have an impact on the foraging ability of some nocturnal rodents. Moonlight increases the vulnerability of small mammals to predation (Brown and Kotler, 2004); as such small mammals avoid foraging during full moon (Mohr *et al*, 2003).

2.3.2 The role of competition on small mammals

Competition is a density dependent factor that shapes small mammal species abundance and distribution (Chase *et al.,* 2002). When a population of small mammal has exceeded the carrying capacity, both interspecific and intraspecific competition may exist particularly when the resources (food and breeding space) are in limited supply (Begon *et al.,* 1996). The complexity of ecological communities makes it difficult to pin point and understand the

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existence of interspecific competition (Lancaster, 2009). Competition can lead to the local extinction of co-existing species.

2.4 Elevational patterns in small mammal species richness and diversity

Although the Soutpansberg Mountain is known to be a biodiversity hotspot, including a relatively higher diversity of mammals (Gaigher and Stuart, 2009), research on small mammals biodiversity along altitudinal transects in the Soutpansberg is still deficient. Altitudinal studies of small mammals have provided inconsistent and contrasting results (Patterson, 1989; Goodman and Carleton, 1998; Goodman *et al*., 1999; Goodman and Rasolonandrasan, 2001; Md Nor *et al.,* 2001; Denys *et al*., 2009). Few reviewed publications on diversity patterns along elevational transects of different taxonomic groups have found highest species richness at lower elevations (Stevens, 1992).

In contrast, several studies has revealed maximum species richness at mid-elevation in Costa Rica (McCain, 2004), Tanzania (Stanley and Hutterer, 2007), Madagascar (Goodman and Carleton, 1996; Goodman *et al*., 1996; Goodman and Rasolonandrasan, 2001) and Chile (Patterson, 1989). Mid-elevation peaks in species richness was assumed to be as a result of high precipitation and primary productivity, together with optimum temperatures (Brown, 2001; McCain, 2005). Increased primary productivity at mid-elevation support the co-existence of more species between the base and mountain top (Brown, 2001).

Mid-elevation peaks in species richness could also be as a result of overlap in species range between the peak and bottom of the mountain (Colwell and Lees, 2000). In the Philippines, small mammal species richness increases with increasing altitude, but reaches a maximum at an altitude of about 2000m; above this altitude there was a decline of species richness (Heaney, 2001). Studies on small mammals along altitudinal gradients have also showed increased species richness with the elevation (Mena and Vasquez-Dominguez, 2005), other studies *inter alia* include, Wuling Mountain, China (Jing-Yuang, 2008) and Mt. Snežnik, Slovenia (Krystufek *et al.,* 2011), but in Wuling Mountain, China, vegetation diversity and community stability together with less ecological disruption at higher altitude was pointed out to be the most likely candidate for the increase in small mammal species richness (Jing-Yuang *et al*., 2008).

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In South Africa, the Kamanassie Mountains of the Western Cape revealed no significant change in species richness of small mammals (Bond *et al.,* 1980; Nel *et al.,* 1980) whereas a decrease in species richness with increase in altitudes was found to be the prominent pattern in other mountains such as the Natal Drakensberg (Rowe-Rowe and Lowry, 1982; Rowe-Rowe and Meester, 1982) and Eastern Cape Drakensberg (Amstrong and van Hensbergen, 1996). Similar patterns of decrease in species richness with elevation was also observed in Retezat Mountain National Park, Romania (Benedek, 2006), Mount Nuang, Malaysia (Zainab, 2002), Bwindi Impenetrable National Park, Uganda (Kasangaki *et al*., 2003), and Swaziland (Monadjem, 1999).

2.5 Bergmann's Rule and mammals

Body mass of warm-blooded species are thought to increase with latitude and altitude (Blackburn and Gaston, 1996; Meiri *et al*., 2007). Studies have suggested that body size of species can be influenced by factors (rainfall and food availability) other than temperature (Meiri *et al*., 2007). Other studies have found that only 35% of mammalian fauna did not conform to the Bergmanns's rule (Meiri and Dayan, 2003). Studies in the Neotropic found that body mass of rodents increased with decrease in ambient temperature (Medina *et al.*, 2007).

2.6 Conclusion

Small mammal species diversity is influenced by a combination of different factors, but studying the relationship between these factors provides clues to explain underlying biodiversity patterns of their distributions, e.g. across altitudinal gradients.

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CHAPTER 3

GENERAL DESCRIPTION OF THE STUDY SITE

3.1 Location of the study area

The study area is located on the southern slopes of the Soutpansberg Mountain between Louis Trichardt (-23° 01' S and 29° 25 E) and Vivo (-23° 03S and 29° 28' E) respectively on the farms Bergplaatz (Lajuma) and Koedoesvlei (Fig. 3.1). These properties are privately owned and form part of the Luvhondo Nature Reserve and the Vhembe Biosphere Reserve. Altitude varies from about 900m to 1748m above sea level on Lajuma peak, which is the highest point in Soutpansberg Mountain range (Mostert *et al*., 2008).

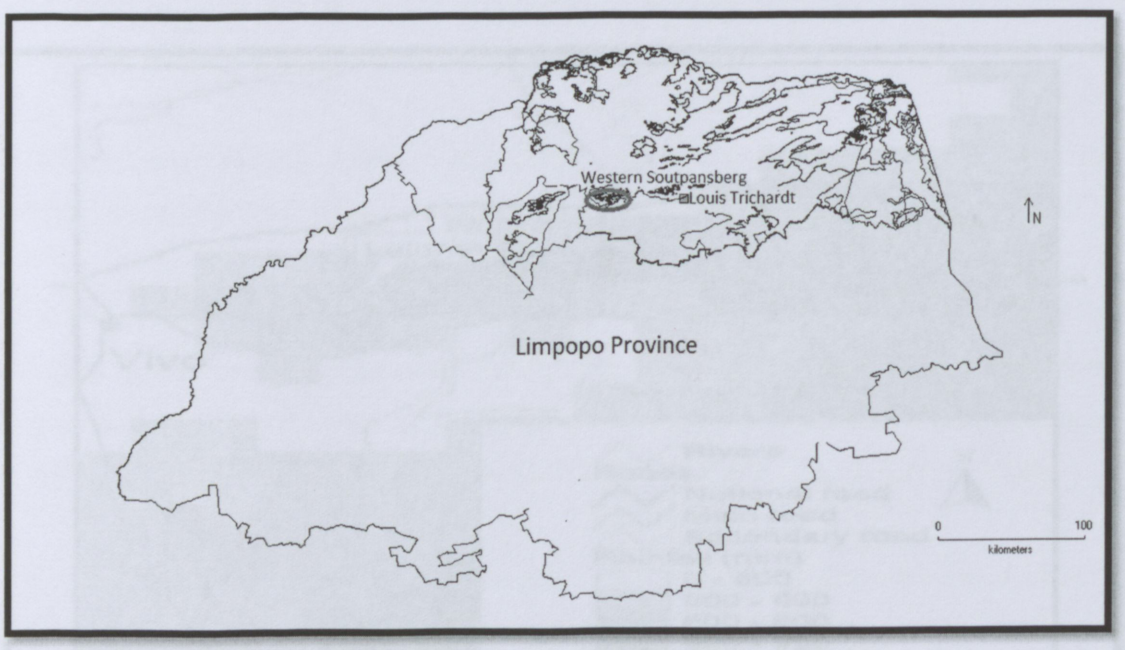


Figure 3.1. Map of Limpopo Province showing the location of the Western Soutpansberg Mountain.

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3.2 Climate

Daily average temperatures in the Soutpansberg Mountain ranges between 16-40°C during the warm wet season from October-March and 12-22°C during the cool dry season from April-September (Kabanda, 2003).The area receives summer rainfall from October to March. Ridges of the Soutpansberg receive orographic rainfall on the southern slope and shadow rain effects are apparent on the northern ridges (Mostert *et al.*, 2008). Mean annual rainfall on the mountain decreases from east to west. Rainfall in the eastern part (Entabeni) can reach a peak of 2000mm per annum and it can be as low as 340mm per annum on the northern side of the western section (Fig. 3.2) (Kabanda, 2003, Mucina and Rutherford, 2006). The average annual rainfall at the study site, measured over a period of 25 years at an altitude of 1350m, is 730mm (Gaigher, pers. comm.)

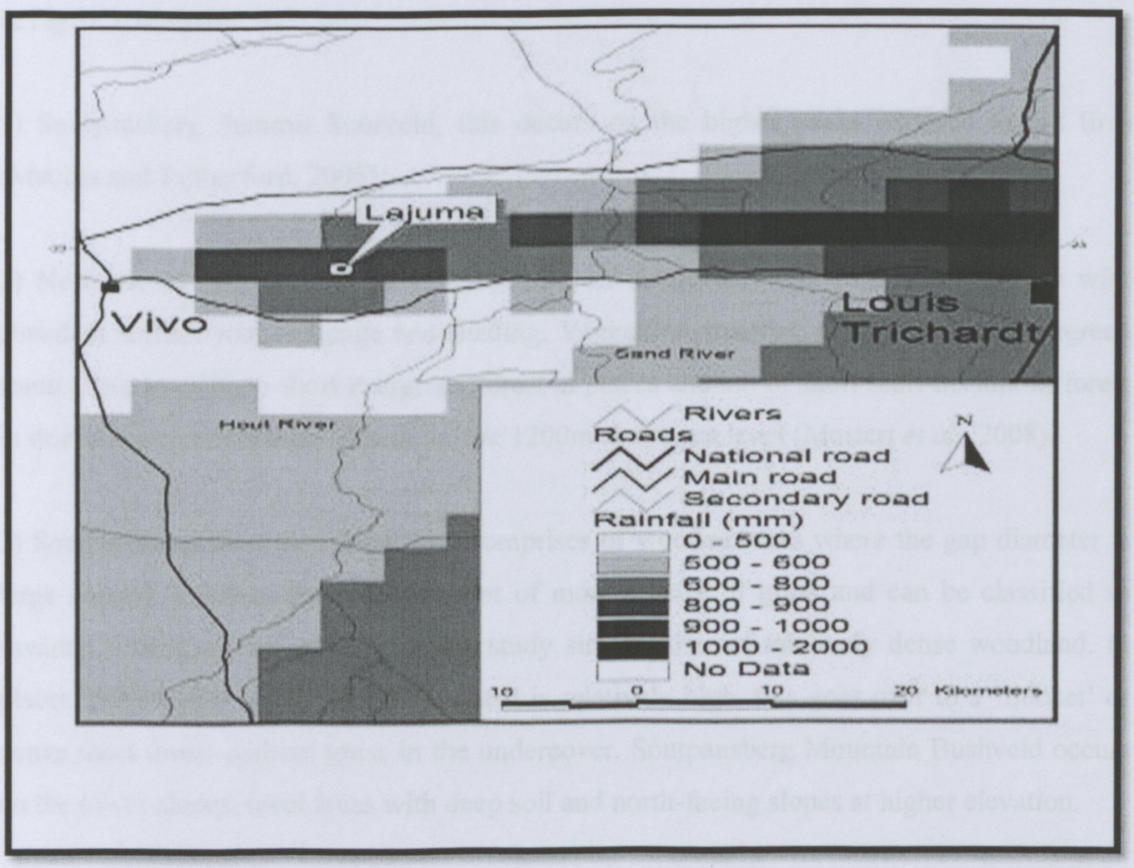


Figure 3.2. Rainfall map of the Western Soutpansberg Mountain (Map obtained from Lajuma Research Centre).

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3.3 Geology and soils

The Soutpansberg mountain is characterised by reddish or brown sandstone, quartzite, conglomerate, basalt, tuff, shale and siltstone of the Soutpansberg group (Mucina and Rutherford, 2006; Mostert *et al*., 2008). Soils originated from quartzite and sandstone is normally poor in nutrients and they are often acidic. Deeper soils are found in the valley bottoms (Mostert *et al*., 2008).

3.4 Vegetation

The southern slopes of the Western Soutpansberg Mountain Range has a high diversity of vegetation types due to topographical heterogeneity and associated micro-climatic variation, variation in soil type and the impact of veld fires. The main vegetation types, as represented in Fig. 3.3, include:

1) Soutpansberg Summit Sourveld, this occurs on the higher peaks exposed to hot fires (Mucina and Rutherford, 2006).

2) Northern Mistbelt Forest generally occurs on south, east and west facing slopes with abundant surface rock, seepage and shading. Vegetation structure varies from tall evergreen forest close to cliffs to short evergreen forest in places and tall or short semi-deciduous forest in drier environments at an altitude above 1200m above sea level (Mostert *et al*., 2008).

3) Soutpansberg Mountain Bushveld, comprises of wooded areas where the gap diameter is large enough to allow the establishment of most species of grass and can be classified as savanna. Most of the savanna in this study site consists of relatively dense woodland. In places, particularly where the clay content is relatively high, this goes over to a "thicket' or dense short forest without grass in the undercover. Soutpansberg Mountain Bushveld occurs on the lower slopes, level areas with deep soil and north-facing slopes at higher elevation.

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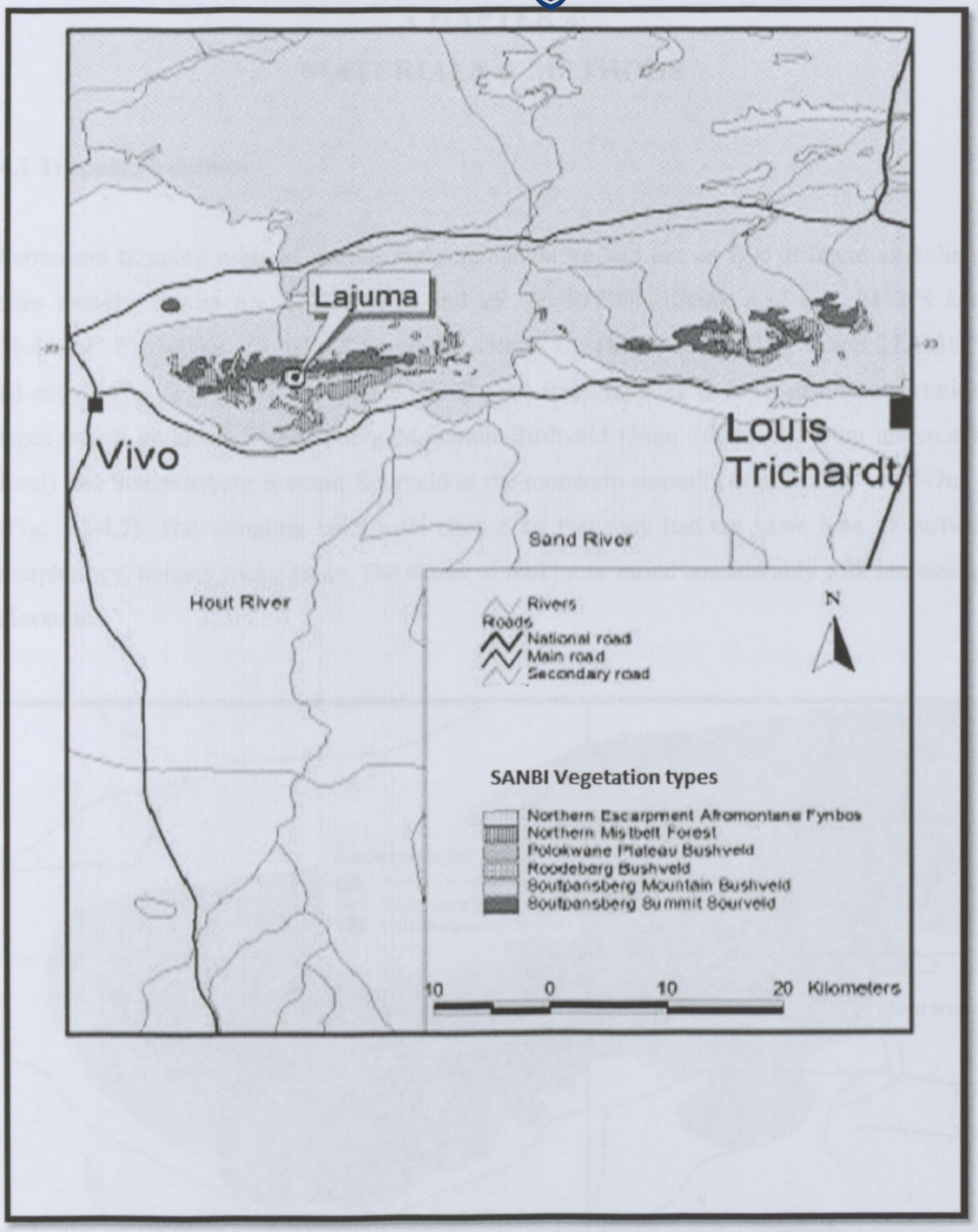


Figure 3.3. Vegetation map of the Soutpansberg (Mostert *et al.*, 2008).

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CHAPTER 4

MATERIALS & METHODS

4.1 Trapping localities

Permanent trapping grids of similar measurement were laid out on five different altitudinal sites namely 1000m a.s.l. (23.0503°S and 29. 46 917°E), 1200m a.s.l (23. 0493°S and 29.44722° E), 1400m (23. 03438°S and 29. 43088° E), 1600m (23. 02258° S and 29.43388° E) and 1747m (23. 25° S and 29.42917° E). The trapping sites covered distinct vegetation types which included Soutpansberg Mountain Bushveld (from 1000m to1400m above sea level) and Soutpansberg Summit Sourveld at the mountain summit (from1600 m to 1747m) (Fig. 4.1-4.7). The sampling sites were chosen so that they had the same type of surface morphology, namely rocky areas. The extent of rockiness varied considerably with increasing elevation.

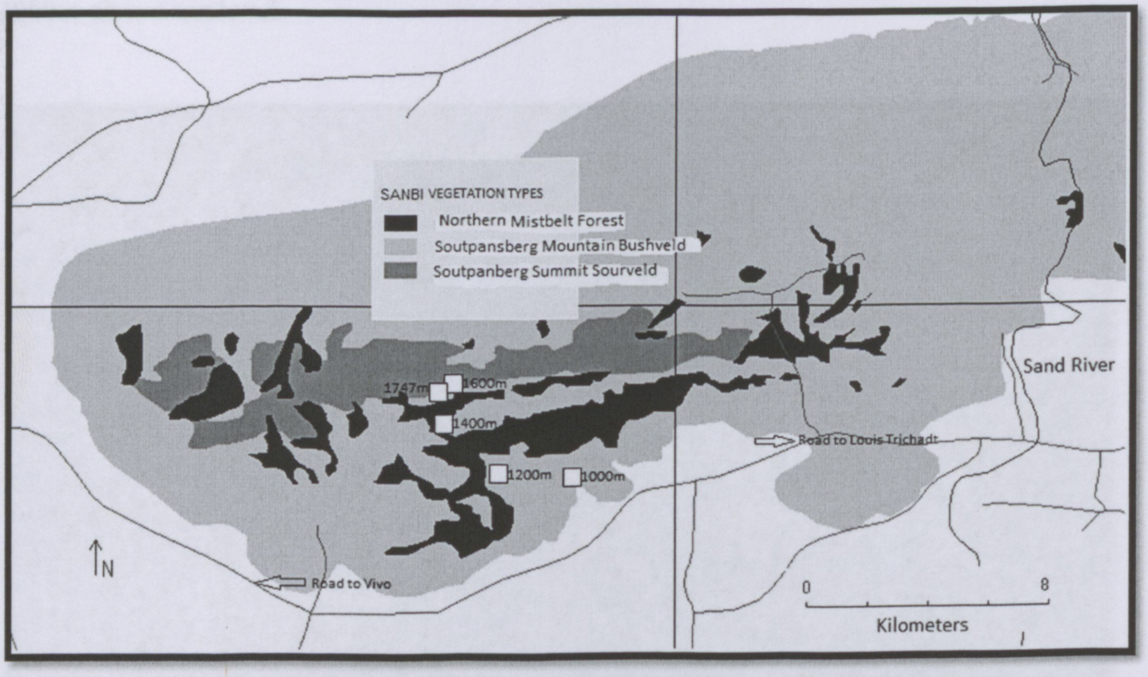


Figure 4.1. A map indicating location of sampling sites in different vegetation types.

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Figure 4.2. A photo taken from sampling site (Soutpansberg Mountain Bushveld) at 1000m above sea level.



Figure 4.3. A photo taken from the sampling site (Soutpansberg Mountain Bushveld) at 1200m above sea level.

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Figure 4.4. A photo taken from the sampling site (Soutpansberg Summit Sourveld) at 1400m above sea level.



Figure 4.5. A photo taken from the sampling site (Soutpansberg Summit Sourveld) at 1600m above sea level.

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Figure 4.6. A photo taken from the sampling site (Soutpansberg Summit Sourveld) at 1747 m above sea level.

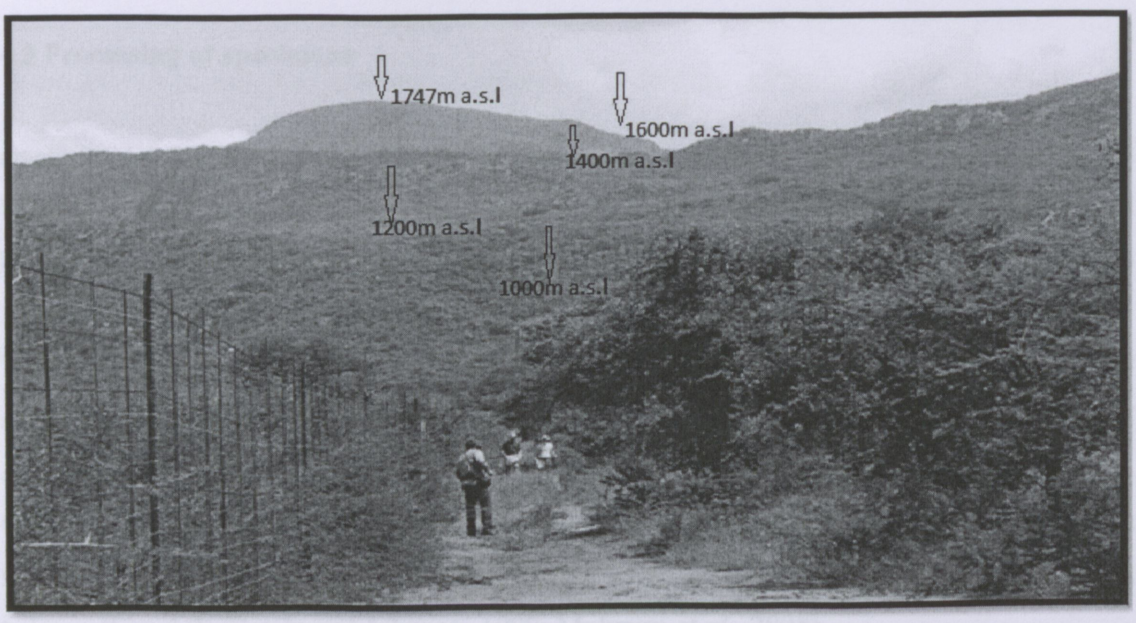


Figure 4.7. A photo taken from the southern side of the mountain showing the location of sampling sites.*a.s.l (above sea level).

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4.2 Trapping procedure

A permit to sample small mammals was obtained from the Limpopo Department of Environmental Affairs and Tourism (LEDET), Permit No. 001-CPM403-00010. Forty nine aluminium folding Sherman traps were placed 10m apart on 7x7 m fixed trapping grid at each sampling site covering an area of 4900m^2 meters. The Sherman traps were baited with oats mixed with cooking oil and checked early in the morning and late in the afternoon (Armstrong and van Hensbergen, 1996; Lima and Jaksic, 1999; Perrin and Johnson, 1999 and Ferreira and van Aarde, 1996).

Sampling at each site covered four nights per season, for four seasons (summer: November 2010-March 2011; autumn: April-May 2011; winter: June 2011, spring: August-October, 2010). At each trap station, flag tapes with trap numbers was tied on nearby trees or grass, so that location of traps could be easily recognised and to ensure that same sites were sampled every season. Traps were placed in shady areas to prevent heat stress.

4.3 Processing of specimens

Capture and handling followed the guidelines prescribed by the American Society of Mammalogists (Animal Care and Use Committee, 1998). Species were identified in the field by external characteristics using the key of Newbery, (1999). Individuals which could not be identified with certainty in the field were sacrificed and prepared as voucher specimens. Voucher specimens consisted of either skull and/ or whole body stored in ethanol. Muscle samples were also extracted and stored in Eppendorf tubes for genetic verification (Balete *et al*., 2009). Voucher specimens were lodged with the Durban Natural Science Museum. Captured individuals were marked by fur clipping so that they could be recognised when recaptured during sampling period. Individuals were weighed using a 100g Pesola spring balance (Fig. 4.8) (Perrin and Johnson, 1999; Mulungu *et al*., 2008).

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Figure 4.8. *M. namaquensis* being weighed in a plastic zipper lock bag.

The reproductive condition of each specimen was recorded as follows:
Males were regarded as scrotal when the testes moved down into the scrotum and non-scrotal when the testes remained inside the abdomen (Lancaster, 2009). Males with a descended testes was considered to be mature and reproductively active. It was not possible to determine the reproductive status of Shrews and Elephant shrew males because their testes remain in the abdomen even when they are reproductively active (Lancaster, 2009).

Females were considered perforate when the vulva was open and imperforate when it was closed (Monadjem and Perrin, 2003). Perforate females are reproductively active have also reached maturity (Haveron, 2008; Mugabe, 2008; Lancaster, 2009). Pregnant, lactating and post lactating female were noted by reddishness and the size of the nipples and the presence of milk (Haveron, 2008). Some rodent species (excluding *A. spinosissimus*) weighing less than 25g were considered as juveniles.

4.4 Vegetation and microhabitat sampling

At the centre around each of the 49 Sherman traps a 5x5m quadrat was laid. In each quadrat five microhabitat variables such as plant height, percentage leaf litter, % bare soil, % rock

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cover, % canopy cover was measured and SANBI vegetation types (e.g. Soutpansberg summit sourveld and Soupansberg mountain bushveld). The mean value of these microhabitat variables was calculated and percentage cover was recorded in the following categories: 0 = <1% cover; 1 = 1-5%; 2 = 6-25%; 3 =26-50%; 4 =51-75%; 5 = 76-100% as described in various studies (Appendix 1) (William *et al*., 2002; Monadjem, 2005).

4.5 Climatic data collection

Shade temperature was measured from (August 2010-June 2011) using Thermocron iButtons/ data loggers attached to 1m poles. Cold chain Thermodynamics software was used to download temperature data from data loggers. Monthly rainfall was recorded at each study site from August 2010 to June 2011 using rain gauges (Fig. 4.9) and mean, minimum and maximum temperature was recorded during each sampling session (Appendix 1). Additional climatic data, including rainfall and temperature, was obtained from weather stations located at 1200m and 1747m above sea level. These weather stations were placed and monitored by the South African Environmental Observation Network (SAEON).



Figure 4.9. One of the rain gauges placed at an altitudinal site in the Soutpansberg Mountain.

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4.6 Data analysis

4.6.1 Abundance

Small mammal abundance (Minimun Number Alive) was calculated as total number of unique individuals per ½ ha. Models were built to determine which environmental variables explained variation in small mammal abundance (MNA) as discussed in detail in 4.6.3.

4.6.2 Alpha diversity

The statistical software EstimateS (Version 8.2.0) was used to generate actual and expected values for small mammal species richness at each site. Estimate S was also used to calculate Shannon and Simpson diversity indices (Magurran, 2004). Two richness estimators Chao 2 (Chao, 1987) and Jackknife2 were selected because they are less biased to small samples. Estimated richness was compared with observed richness to determine whether all species were sampled during the survey. Rarefaction (or species accumulation) curves were calculated for each site as well as for each sample session by plotting the number of individuals versus observed species (Gotelli and Colwell, 2001; Magurran, 2004).

4.6.3 Beta diversity

The Jaccard similarity index was used to determine the percentage of faunal similarity between different samples. It was calculated by dividing the number of species found in both samples by the total number found and then multiplying by 100. The programme PAST (Hammer *et al*., 2001), was used for cluster analysis to group sites according to their faunal similarity.

4.6.4 Abiotic and biotic correlates of diversity

Using statistical software R 2.11.1 (R development Core Team, Vienna) (http://www.r-project.org), six linear regression models were built in trying to test the influence of different environmental variables (together and separately) on small mammal species richness, diversity and abundance for twenty sample sessions. Although counts data (such as species

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richness and abundance) often display non-normal distributions and non-constant error variance, necessitating the use of generalized linear models, we tested for normality and non-constant variance by examining the distribution of residuals as well as using the Shapiro-Wilk normality test and the Breusch-Pagan test for non-constant error variance. In all variables, these tests were not significant ($p > 0.01$). A linear model was used because the response is weighed and also based on linear combination of parameters and random error. The models tested the influence on these independent variables of several environmental variables including altitude, seasons, vegetation types, climatic (rainfall and temperature) and micro-habitat variables (grass cover, grass height, shrub cover, shrub height, tree cover, tree height, litter cover, rock cover). Initial analyses included all microhabitat variables but, due to high numbers of zero values and/or colinearity between variables, singularities resulted in the regression models making it impossible to calculate coefficients. For this reason, and because exploratory analyses showed no association with independent variables, we removed all microhabitat variables except for rockiness, which did not display statistical problems and which was shown to be an important determinant of species richness. Akaike's information criterion (AIC) was calculated and used to assess the best model that explained the drivers of species richness (both estimated and observed richness), diversity and abundance. The best model was shown by lowest AIC value (Mackenzi *et al.*, 2012). We also computed AICc scores as these are more robust at smaller sample sizes.

4.6.5 Body mass and demography

Changes in body mass due to sex, season and elevation were analysed using T-tests (to test for sexual dimorphism, in six species having suitable samples) as well as two-way ANOVAs to test for differences in elevation (as a factor variable) and season in four species which occurred in multiple elevations and seasons (*A. ineptus*, *M. namaquensis*, *R. pumilio* and *E. myurus*). One-way ANOVA was used to test for significant variation in mass between seasons in *A. spinosissimus,* which was found only at 1000 m.

Changes in age and reproductive profiles of small mammals with elevation and season were plotted graphically for the proportion of juveniles and the proportions of reproductive males (scrotal) and females (lactating or pregnant) separately.

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CHAPTER 5

RESULTS

5.1 Species composition, trap success and abundance

After 3720 trap nights a total number of 593 individuals belonging to nine species of rodents, two shrew and one elephant shrew were sampled (Fig. 5.1). Overall trap success (excluding recaptures) was 15 % (Table 5.1). ANOVA (one way) showed that trap success did not differ significantly ($p>0.05$) at different altitudes. Small mammal abundance (combining all species) did not change significantly ($p>0.05$) with altitude or any of the other environmental variables. Abundance of two rodent species *A. ineptus* and *M. namaquensis* was slightly higher in autumn and summer than in other season. Although it was not statistically significant ($P> 0.05$), abundance of *R. pumilio* was highest in summer (Fig. 5.1). Peaks in small mammal abundance (e.g *M. namaquensis*, *A. ineptus* and *R. pumilio*) were different at different altitude (Fig. 5.1).

Only three rodent species (*A. ineptus, M. namaquensis* and *R. pumilio*) were abundant (Table 5.1) and also showed a wide altitudinal range (Fig. 5.2). *E. myurus* was also relatively abundant for an insectivore at the higher altitudes; this species was absent in the lower altitude grids but abundant at higher altitudes (Table 5.1; Fig. 5.1). *M. varius* was also only collected at the highest altitudes of 1747m (Fig 5.1). The relative rarity of other species was probably due to narrow niche. *A. ineptus* was most abundant in catches below an altitude of 1400m and catch success declined at higher altitudes (Table 5.1). *M. namaquensis* was abundant at all altitudes, particularly at 1400m. *A. spinosissimus* is clearly a species of lower altitudes and was only recorded below 1200m. *R. pumilio* was rarely collected below 1600m but was the most abundant species in catches above this altitude (Table 5.1)

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Table 5.1. Small mammal species composition of different elevational samples, indicating the total of unique individual sampled over four consecutive seasons.

Species			Altitude (m)			
	1000	1200	1400	1600	1747	Total
Order Rodentia						
Aethomys ineptus	23	34	7	4	3	**71**
Micaelamys namaquensis	49	48	72	46	33	**248**
Acomys spinosissimus	18	0	0	0	0	**18**
Dendromus melanotis	1	0	0	0	0	**1**
Aethomys chrysophilus	0	0	0	1	0	**1**
Rhabdomys pumilio	0	1	8	74	55	**138**
Otomys angoniensis	0	0	0	1	1	**2**
Graphiurus murinus	0	0	0	0	1	**1**
Paraxerus cepapi	0	0	3	0	0	**3**
Order Eulipotyphla						
Myosorex varius	0	0	0	0	5	**5**
Crocidura maquassiensis	0	0	0	2	0	**2**
Order Macroscelidea						
Elephantulus myurus	0	0	6	15	17	**34**
Total	91	83	97	143	114	**593**
Total number of species	4	3	5	6	7	**12**
Total number of trap nights	748	748	748	748	748	**3720**
Trap success (%)	12	11	13	19	15	**15**

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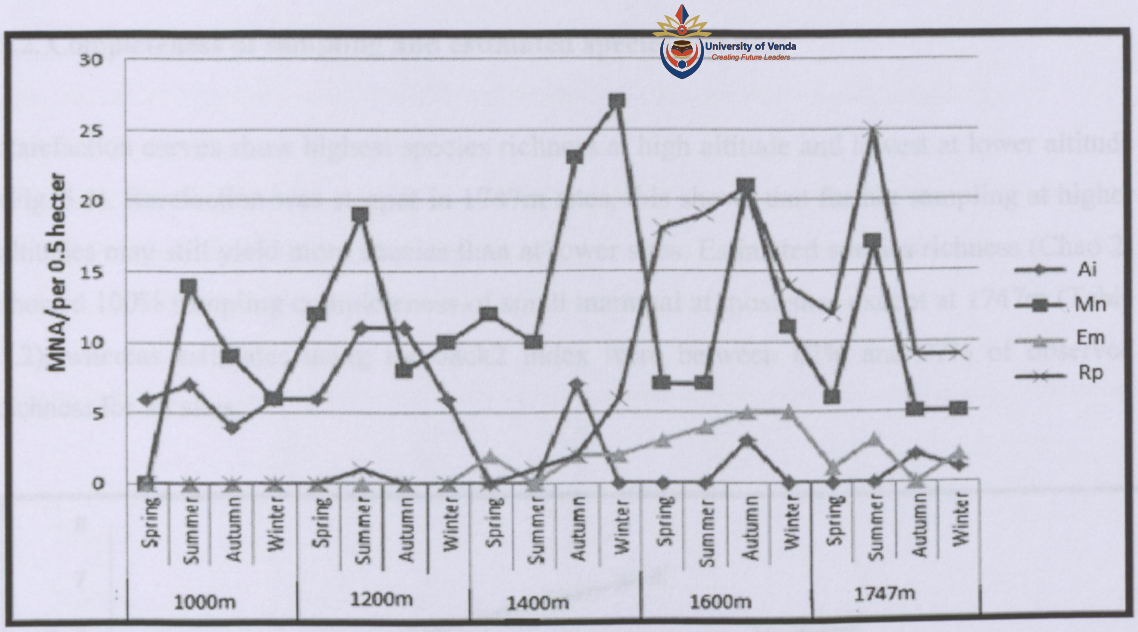


Figure 5.1 Abundance of most commom small mammals at different altitudinal sites over four seasons in 2010-2011. AI (*Aethomys ineptus*) Mn (*Micaelamys namaquensis*); Em (*Elephantulus myurus*); Rp (*Rhabdomys pumilio*).

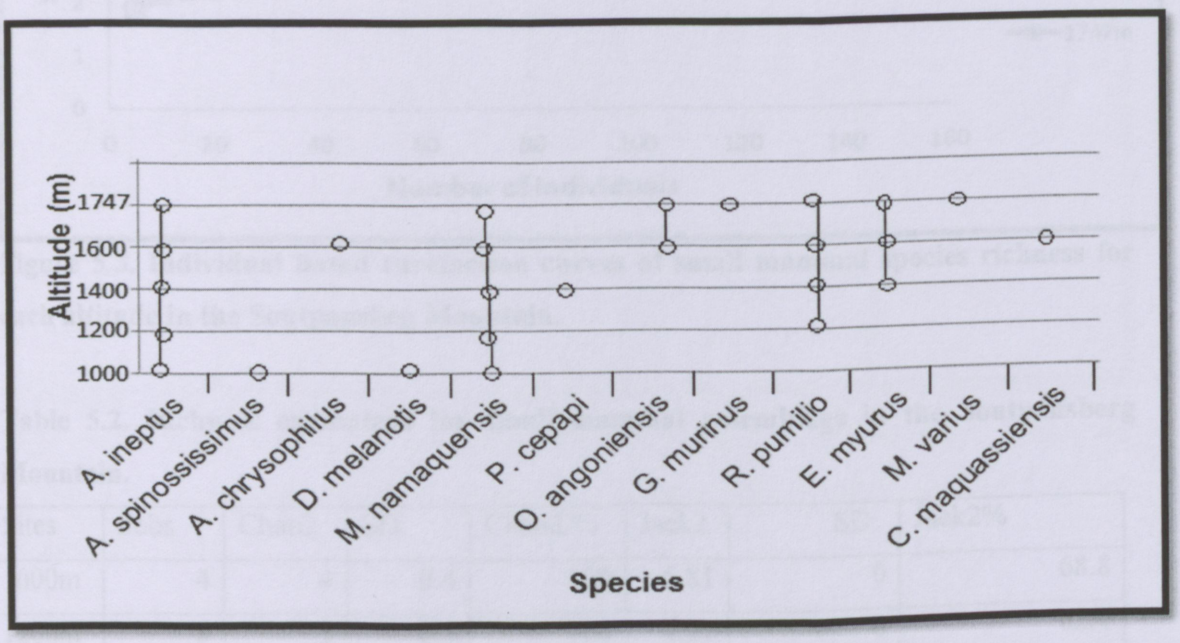


Figure 5.2. Elevational ranges of each species captured in the Soutpansberg Mountains. Circles indicate the occurrence of species.

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5.2. Completeness of sampling and estimated species richness

Rarefaction curves show highest species richness at high altitude and lowest at lower altitude (Fig. 5.3). Rarefaction was steeper in 1747m sites, this shows that further sampling at higher altitudes may still yield more species than at lower sites. Estimated species richness (Chao 2) showed 100% sampling completeness of small mammal at most sites except at 1747m (Table 5.2), whereas estimates using the Jack2 index were between 62% and 97% of observed richness for all sites.

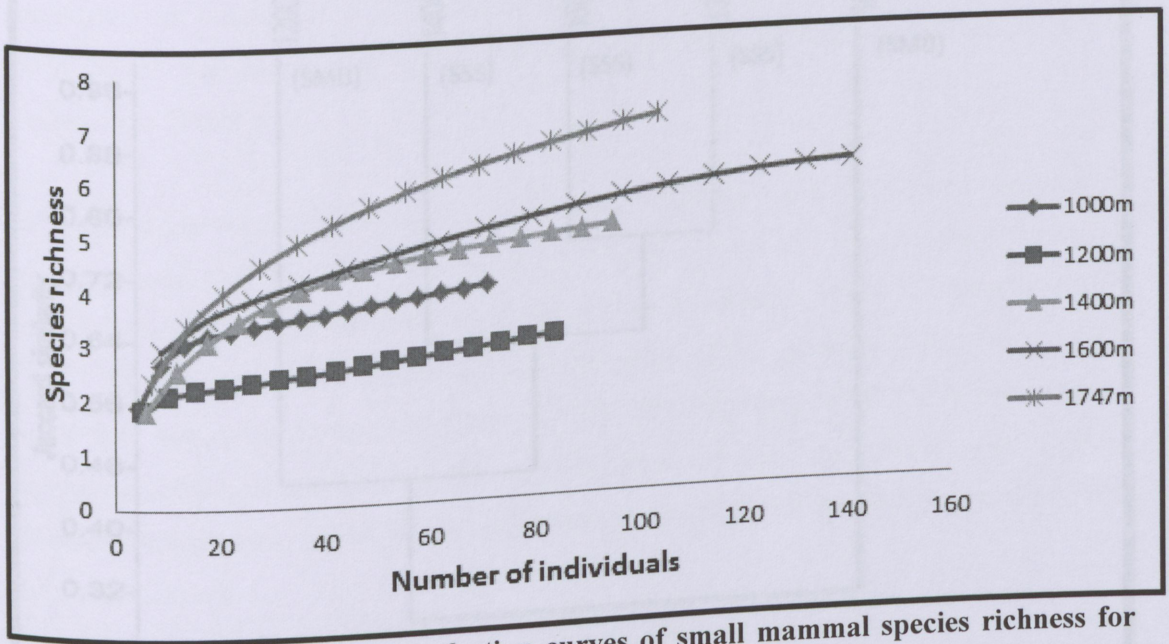


Figure 5.3. Individual based rarefaction curves of small mammal species richness for each altitude in the Soutpansbeg Mountain.

Table 5.2. Richness estimators for small mammal assemblage in the Soutpansberg Mountain.

Sites	Sobs	Chao2	SD	Chao2 %	Jack2	SD	Jack2%
1000m	4	4	0.4	100	5.81	0	68.8
1200m	3	3	0.3	100	4.81	0	62.4
1400m	5	5	0.42	100	6.81	0	73.4
1600m	6	6	0.16	100	6.18	0	97.1
1747m	7	9	3.74	78	9.8	0	71.4

Sobs (Species observed), SD (Standard deviation).

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5.3. Faunal similarities among different altitude in the western Soutpansberg

Cluster analysis based on Jaccard's similarity index shows that the lowest altitudinal site (1000m a.s.l) is less similar (28%) to other sites in terms of faunal assemblages than higher altitudinal sites from Soutpanberg Summit Sourveld (Fig. 5.4).

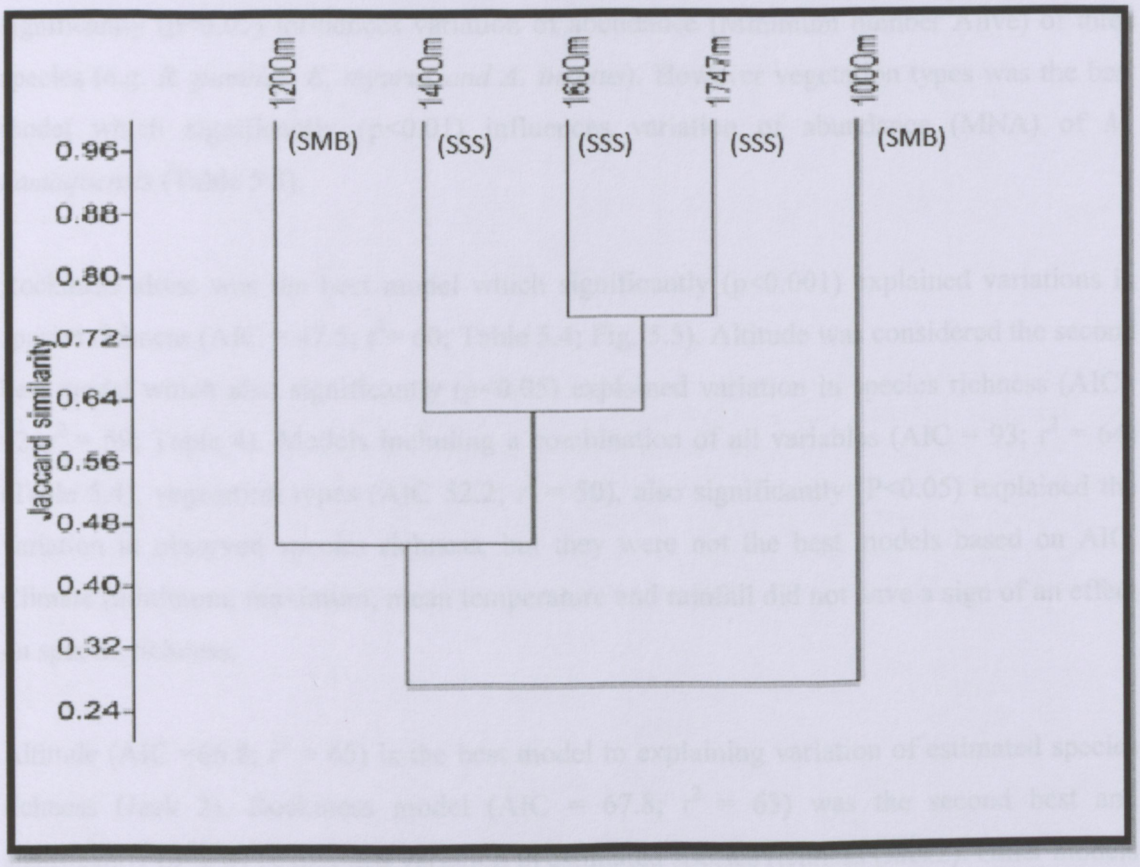


Figure 5.4. Cluster analysis of small mammal composition at five altitudinal sites based on Jaccard's similarity. (SMB) Soutpansberg Mountain Bushveld, (SSS) Soutpansberg Summit Sourveld.

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5.4 Environmental correlates of relative abundance (Minimum Number Alive) species richness and diversity.

Rockiness was the best model that influenced variation in Abundance (Minimum Number Alive) for all small mammals combined, but this was not statistically significant (Table 5.3). When tested separately for each species rockiness was also the best model which significantly ($p<0.01$) influences variation of abundance (Minimum number Alive) of three species (e.g. *R. pumilio, E. myurus and A. ineptus*). However vegetation types was the best model which significantly ($p<0.01$) influences variation of abundance (MNA) of *M. namaquensis* (Table 5.3).

Rockiness alone was the best model which significantly ($p<0.001$) explained variations in species richness (AIC = 47.5; $r^2= 60$; Table 5.4; Fig. 5.5). Altitude was considered the second best model which also significantly ($p<0.05$) explained variation in species richness (AIC= 52; $r^2 = 59$; Table 4). Models including a combination of all variables (AIC = 93; $r^2 = 64$) (Table 5.4), vegetation types (AIC 52.2; $r^2 = 50$), also significantly ($P<0.05$) explained the variation in observed species richness, but they were not the best models based on AIC. Climate (minimum, maximum, mean temperature and rainfall did not have a sign of an effect on species richness.

Altitude (AIC =66.8; $r^2 = 65$) is the best model to explaining variation of estimated species richness (Jack 2). Rockiness model (AIC = 67.8; $r^2 = 63$) was the second best and significantly ($p<0.01$) explained variation in estimated species richness (Jack2). Other models (climate, vegetation and a combination of all variables) also significantly influence variation estimated richness (Table 5.4).

Regression analyses showed that altitude did not significantly ($p> 0.05$) explain variation in either Shannon's or Simpson's species diversity measures. Rockiness was the best model which explains variation in species diversity (Simpson's) (Table 5.4). The combination of all variables ($r^{2=} 0.82$) also significantly influence variation of species diversity (Table 5.4).

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Table 5.3. Comparison of performance of six regression models testing for environmental predictors of abundances (Minimum Number Alive) for all small mammals combined and for the four most common species, over five elevational sites, each sampled in all four seasons (n= 20 sample session each of four trap-nights). Best models indicated by lowest AIC scores and high adjusted R^2 values. Significance of corresponding ANOVA F-values indicated as * (P<0.05) or ** (p<0.01). In models 1, 2, 4, and 5 single variables were tested. In model 3, four variable were tested and model 6 all eight variables were tested.

Model	All spp		*A. ineptus*		*M. namaquensis*		*R. pumilio*		*E. myurus*	
	AICc	R^2	AICc	R^2	AICc	R^2	AICc	R^2	AICc	R^2
1. Altitude	156.7	0.11	103.2	0.45**	140.3	-0.05	129.4	0.6**	75.8	0.36**
2. Season	163.6	-0.008	120.8	-0.06	144.3	-0.03	154.8	-0.15	92.3	-0.17
3. Climate	167.3	-0.05	116.4	0.26	150.3	-0.2	145.7	0.37*	87.0	0.22
4. Vegetation types	156.5	0.12	95.2	0.63**	**139.4**	-0.01	136.8	0.41**	73.0	0.45**
5. Rockiness	**155.6**	0.16	**94.4**	0.65**	140.3	-0.005	**125.2**	0.67**	**68.8**	0.55**
6. All	209.5	-0.18	137.2	0.71**	188.2	-0.09	169.8	0.72*	122.1	0.39**

Table 5.4. Comparison of performance of six regression models testing for environmental predictors of observed and expected (Jack2) species richness and Simpson's diversity index (D) over five elevational sites, each sampled in all four seasons (n= 20 sample session each of four trap-nights). Best models indicated by lowest AIC scores and high adjusted R^2 values. Significance of corresponding ANOVA F-values indicated as * (P<0.05) or ** (p<0.01). In models 1, 2, 4, and 5 single variables were tested. In model 3, four variable were tested and model 6 all eight variables were tested.

Models	Observed richness		Estimated richness (Jack2)		Simpson's diversity (D)	
	AICc	R^2	AICc	R^2	AICc	R^2
1. Altitude	52.0	0.50**	**66.8**	0.65**	57.9	-0.004
2. Season	71.0	-0.03	93.2	-0.05	58.0	0.19
3. Climate	66.6	0.28	84.1	0.42*	65.1	0.003
4. Vegetation types	52.2	0.50**	74.2	0.49**	58.9	-0.005
5. Rockiness	**47.5**	0.60**	67.8	0.63**	**57.2**	0.03
6. All	93.0	0.64*	105.3	0.77**	70.7	0.82*

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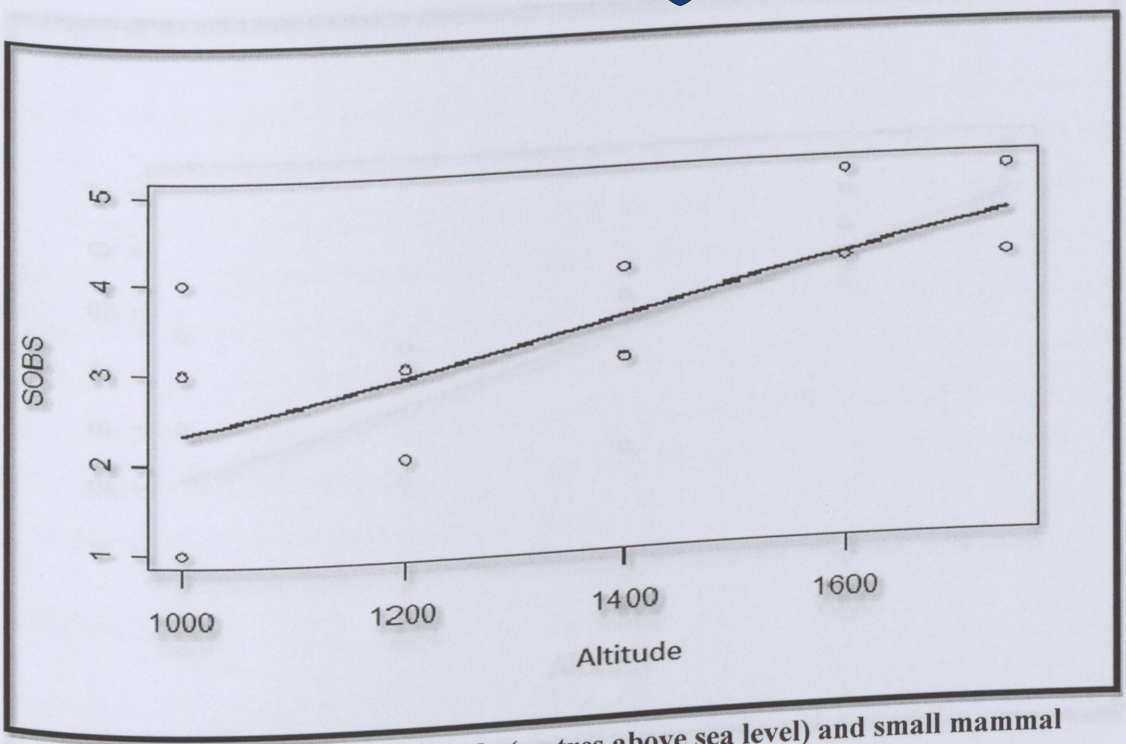


Figure 5.5. Regression between altitude (metres above sea level) and small mammal species richness (SOBS).

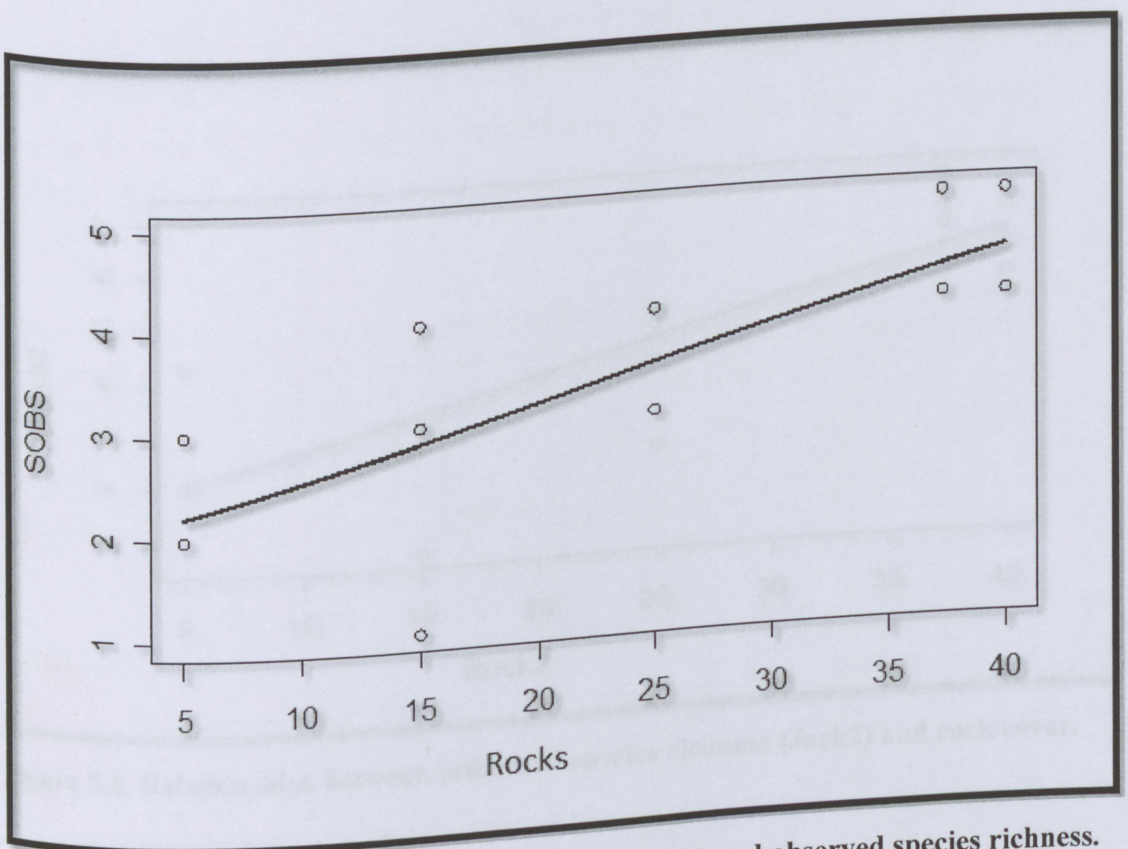


Figure 5.6. Regression between rock cover (percentage) and observed species richness.

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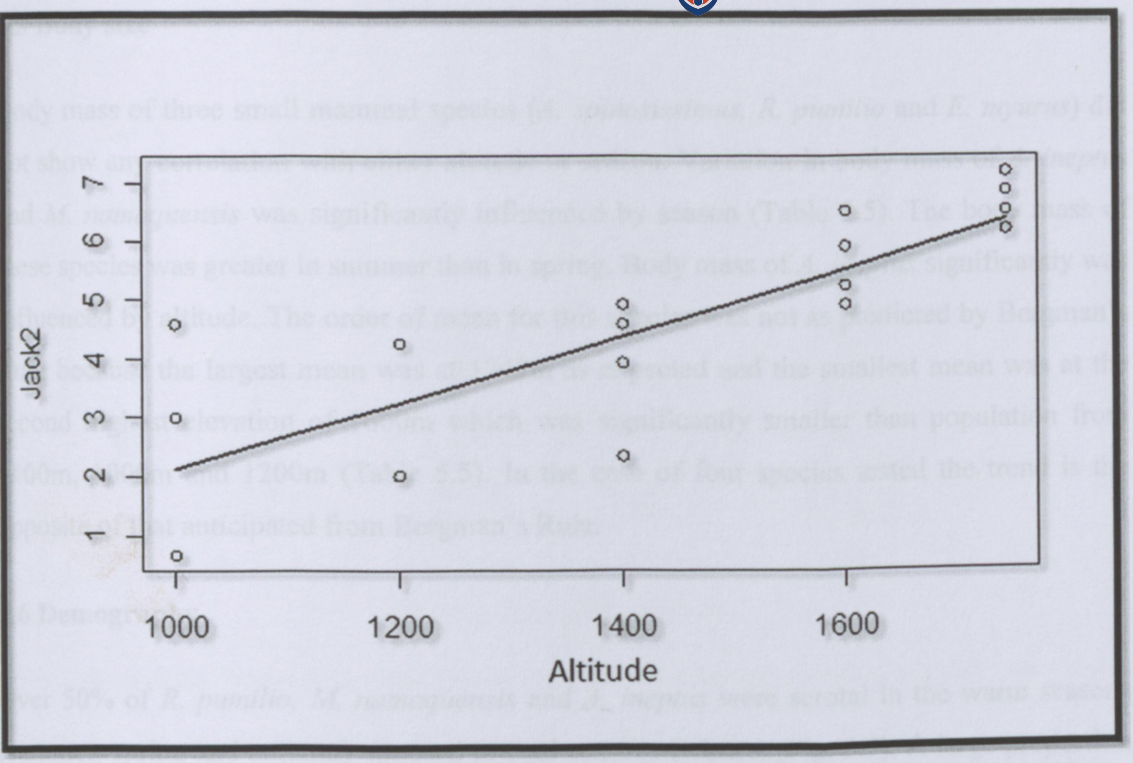


Figure 5.7. Regression of small mammal estimated species richness (Jack2) and altitude.

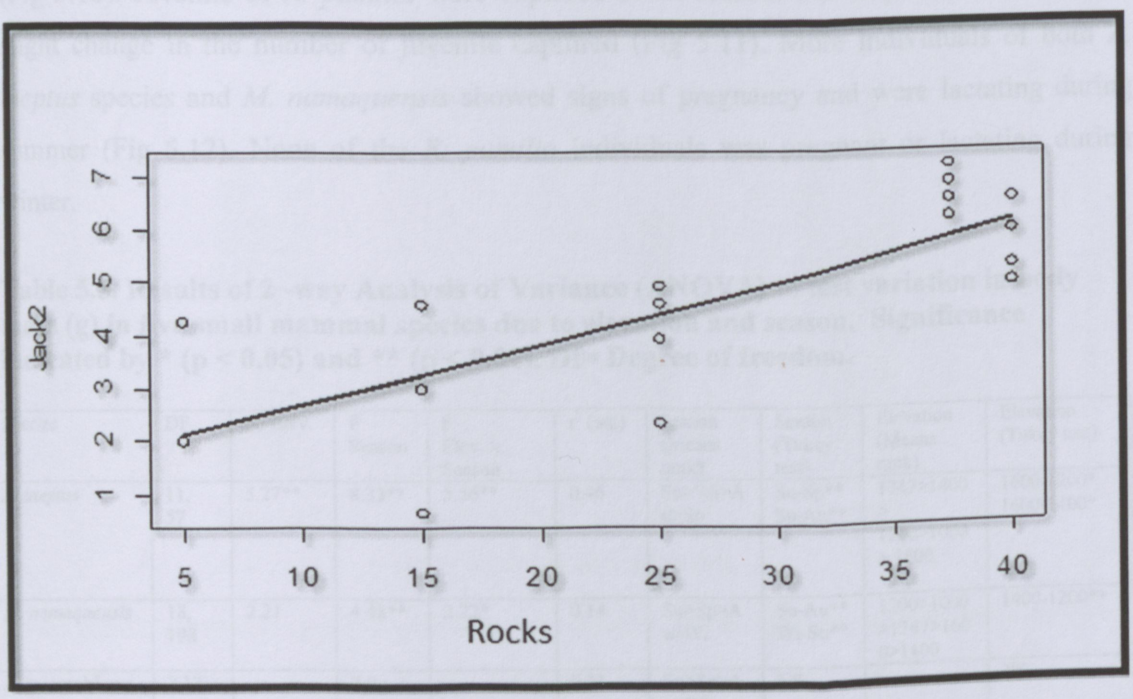


Figure 5.8. Relationships between estimated species richness (Jack2) and rock cover.

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5.5 Body size

Body mass of three small mammal species (*A. spinosissimus, R. pumilio* and *E. myurus*) did not show any correlation with either altitude or season. Variation in body mass of *A. ineptus* and *M. namaquensis* was significantly influenced by season (Table 5.5). The body mass of these species was greater in summer than in spring. Body mass of *A. ineptus* significantly was influenced by altitude. The order of mean for this species was not as predicted by Bergman's Rule because the largest mean was at 1747m as expected and the smallest mean was at the second highest elevation of 1600m which was significantly smaller than population from 1400m, 1000m and 1200m (Table 5.5). In the case of four species tested the trend is the opposite of that anticipated from Bergman's Rule.

5.6 Demography

Over 50% of *R. pumilio, M. namaquensis* and *A. ineptus* were scrotal in the warm seasons (summer, spring and autumn) opposed to cool seasons (winter) (Fig. 5.9). A large proportion of these species were also perforate during warm seasons, as well as reproductive in autumn (Fig 5.10). Juvenile of *R. pumilio* were captured in all season. For *R. pumilio* there was a slight change in the number of juvenile captured (Fig 5.11). More individuals of both *A. ineptus* species and *M. namaquensis* showed signs of pregnancy and were lactating during summer (Fig 5.12). None of the *R. pumilio* individuals was pregnant or lactating during winter.

Table 5.5. Results of 2 -way Analysis of Variance (ANOVA) to test variation in body mass (g) in five small mammal species due to elevation and season. Significance indicated by * ($p < 0.05$) and ** ($p < 0.01$). Df= Degree of freedom.

Species	DF	F Elev.	F Season	F Elev. x Season	r^2 (adj)	Season (Means rank)	Season (Tukey test)	Elevation (Means rank)	Elevation (Tukey test)
A. ineptus	11, 57	5.27**	8.33**	5.56**	0.46	Su>Wi>Au>Sp	Su-Sp** Su-Au**	1747>1400 > 1200>1000 > 1600	1600-1200* 1600-1400*
M. namaquensis	18, 198	2.21	4.48**	2.22*	0.14	Su>Sp>Au>Wi	Su-Au** Wi-Su**	1200>1000 >1747>1600>1400	1400-1200**
A. spinossisimus	2,13	-	2.9	-	0.21	Su>Sp>Au>Wi	NS	-	NS
R. pumilio	3, 111	1.21	2.18	0.39	0.01	Su>Au>Sp>Wi	NS	1200>1600 >1400>1747	NS
E. myurus	3, 18	2.62	0.99	0.03	0.007	Wi>Sp>Su>Au	NS	1747>1400 >1600	NS

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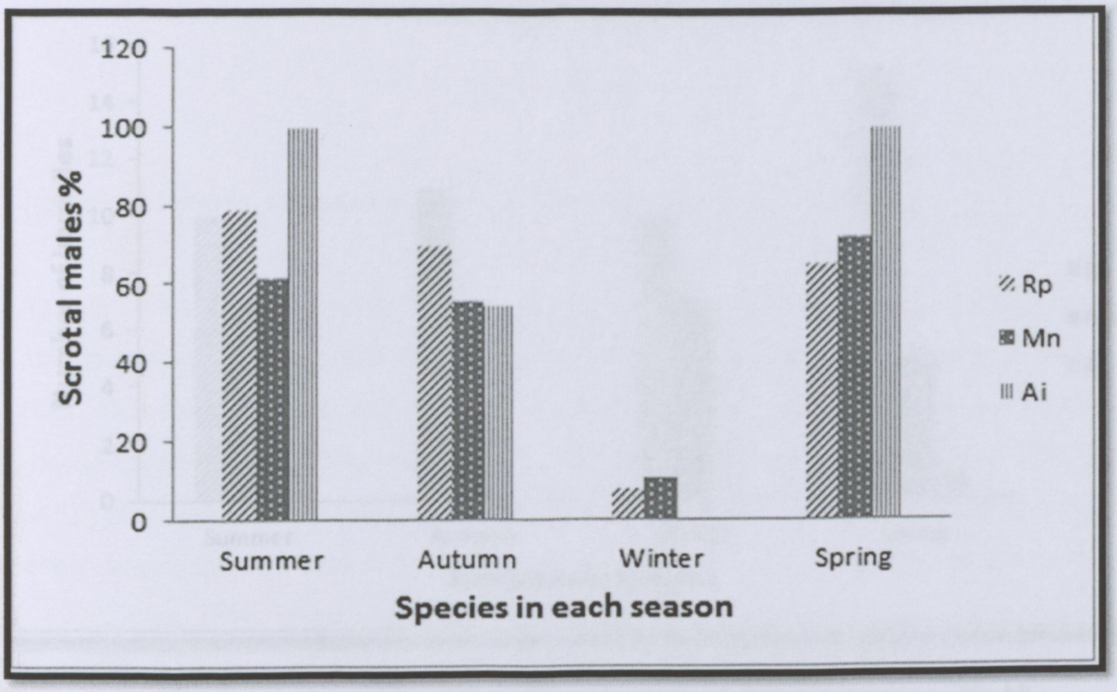


Figure 5.9. Shows proportion of reproductive active males.

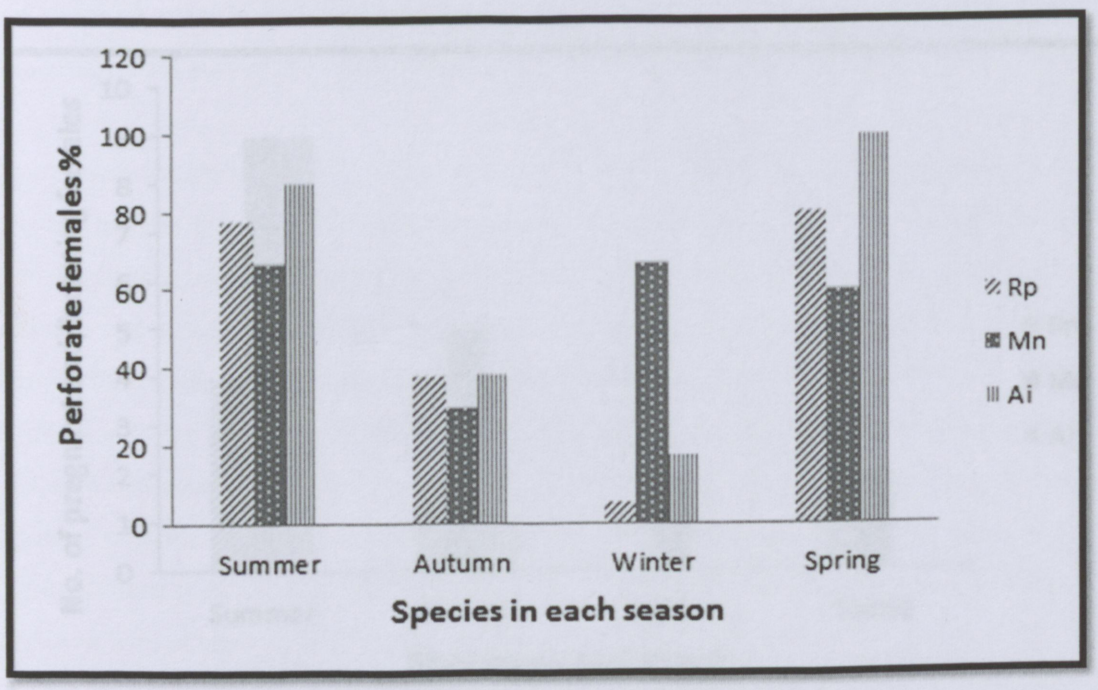


Figure 5.10. Shows proportion of reproductive active females.

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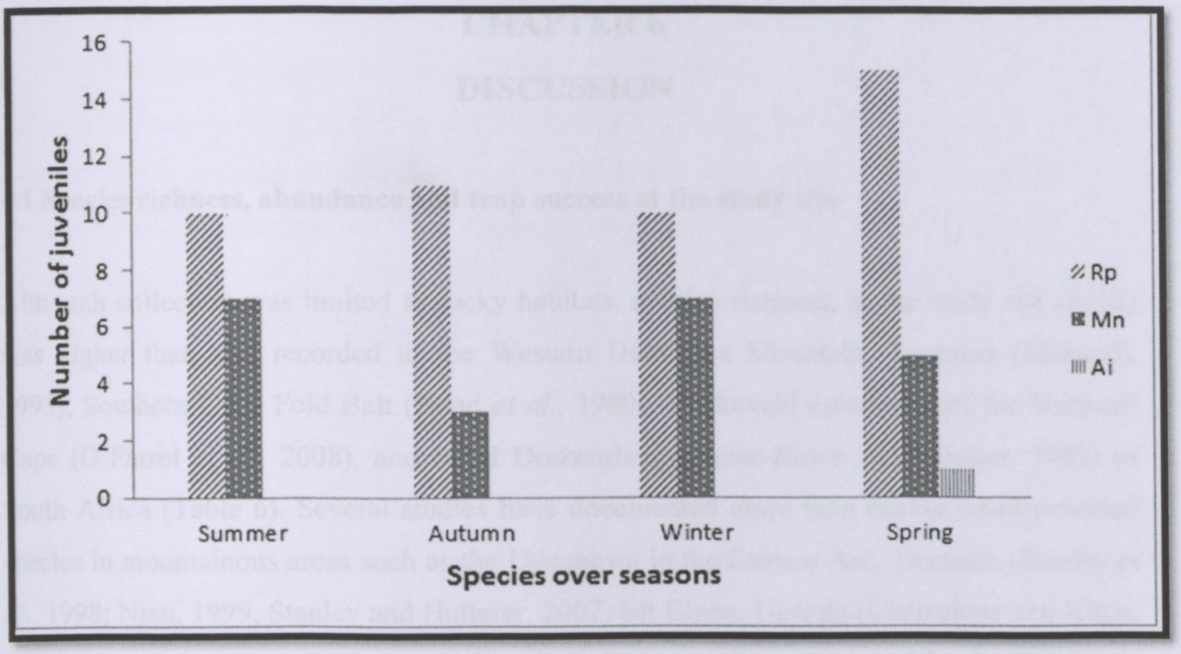


Figure 5.11. Shows number of juveniles of each species in different season. Rp (*R. pumilio*), Mn (*A. namaquensis*), Ai (*A. ineptus*).

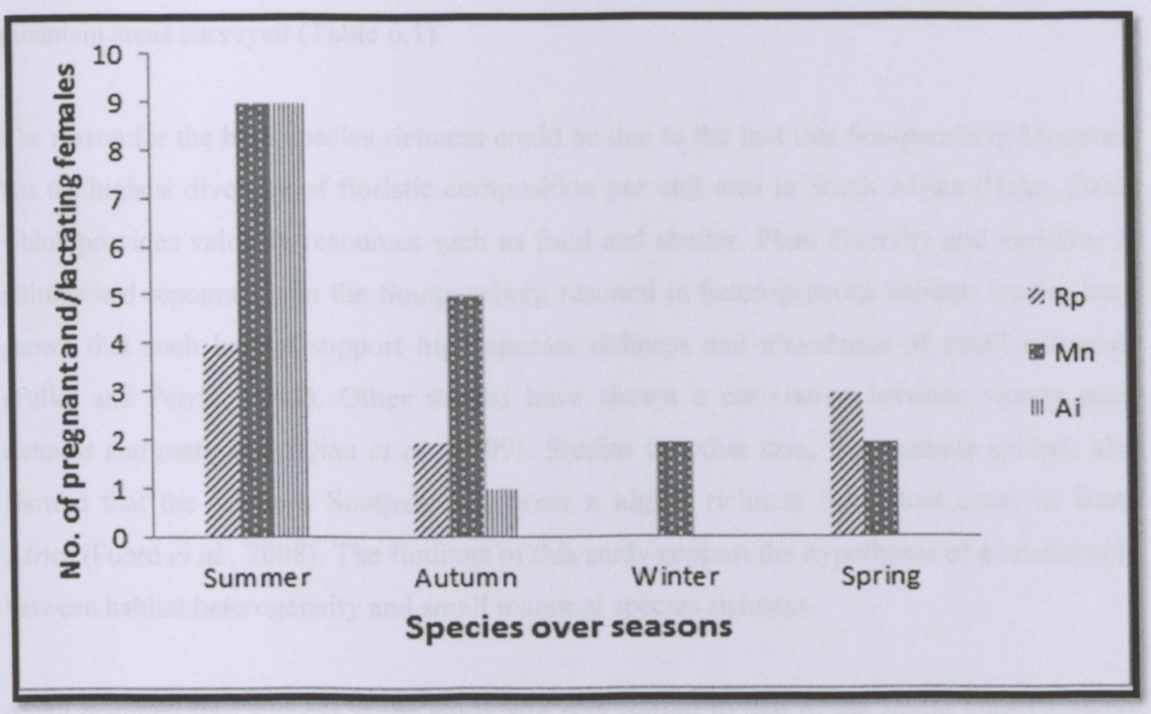


Figure 5.12. Shows number of pregnant and lactating (combined) of each species in different season. *Rp (R. pumilio)*, Mn (*M. namaquensis*), Ai (*A. ineptus*).

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CHAPTER 6

DISCUSSION

6.1 Species richness, abundance and trap success at the study site

Although collection was limited to rocky habitats, species richness, at the study site (n=12) was higher than that recorded in the Western Usambara Mountain, Tanzania (Makundi, 1993), Southern Cape Fold Belt (Bond *et al.,* 1980), Bokkeveld escapment of the Northern Cape (O'Farrel *et al.,* 2008), and Natal Drakensberg (Rowe-Rowe and Meester, 1982) of South Africa (Table 6). Several studies have documented more than twelve small mammal species in mountainous areas such as the Udzungwa in the Eastern Arc, Tanzania (Stanley *et al*., 1998; Njau, 1999, Stanley and Hutterer, 2007) Mt Elgon, Uganda (Clausnitzer and Kityo, 2001), the Balbalasang-Balbalan National Park in northern Luzon Island, Philippines (Rickart, 2010) and the Southern Drakensberg (Armstrong and van Hensbergen, 1996). However, the number of species recorded in all habitats of the Western Soutpansberg, based on museum records and unpublished reports (n= 24) is much higher than in most other mountain areas surveyed (Table 6.1).

The reason for the high species richness could be due to the fact that Soutpansberg Mountain has the highest diversity of floristic composition per unit area in South Africa (Hahn, 2002) which provides valuable resources such as food and shelter. Plant diversity and variation in altitude and topography in the Soutpansberg resulted in heterogeneous habitat; studies have shown that such habitat support high species richness and abundance of small mammals (Fuller and Perrin, 2001). Other studies have shown a correlation between woody plant richness and mammals (Qian *et al*., 2009). Studies on other taxa, for example spiders, also showed that the Western Soutpansberg hosts a higher richness than most areas in South Africa (Foord *et al.,* 2008). The findings of this study support the hypotheses of a relationship between habitat heterogeneity and small mammal species richness.

Small mammal trap success at the study site was similar to that of the Minja Forest Reserve in the North Pares Mountain of Tanzania (Stanley *et al*., 2007). Trap success in the present study was higher than that observed in other mountains such as the Udzungwa (Stanley and

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Hutterer, 2007), Mount Kupe, Cameroon (Denys, 2009), Southern Cape Mountain (Bond *et al.,* 1980) the Kammanasie (Nel *et al*., 1980) the Cederberg (Rautenbach and Nel, 1980), Bokkeveld escapment (O'Farrell *et al*., 2008) and the Natal Drakensberg (Rowe-Rowe and Meester, 1982) of South Africa. However, it was less than reported in wetlands of the Natal Drakensberg (Bowland and Perrin, 1993) and Kilimanjaro, Tanzania (Mulungu *et al*., 2008). Catch per unit effort did not differ significantly in different seasons as found in other studies (Mahlaba and Perrin, 2003, Makundi *et al*., 2006).

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Table 6.1. A comparison of species richness of the Soutpansberg with other studies. Table modified from a study of Kok *et al.*, (2012). *See (Table 7) for species codes.

Area	Soutpansberg Mountain	Cape Fold Mountain	Cape Fold Mountain	Cape Fold Mountain	Cape Fold Mountain	Cape Fold Mountain	Central Drakensberg	Central Drakensberg	Central Drakensberg	Central Drakensbeg
Study	Present Study	O'Farell et al., 2008	Bond *et al.*,1980	Nel *et al.*, 1980	Rautenbach and Nel, 1980)	Kok et al., 2012	Rowe-Rowe & Meester, 1982	Bowland & Perrin, 1993	Armstrong and Hensberger, 1996	Avenant, 1997
Biome	*Savanna/grassland	Fynbos	Fynbos	Fynbos	Fynbos	Grasslan d/Nama-Karoo	Grassland	Grassland	Grassland	Grassland
Altitude	*1000-1747	800	330-1600	640-1890	550-1600	1700-2250	1500-2700	1582-2244	1300-1900	1700-2200
Trap night	*3920	3600	3050	14728	9094	5280	7560	6000	1200	10126
Trap success %	*15	6.1	12.4	2	3.9	8	9.9	17.3	6.9	1.6
Species richness	*12	12	7	13	14	12	9	8	7	13
Species abbreviations	*An	An	Rp	Rp	An	An	Mv	Rp	Rp	An
	*Ai	Rp	Mn	As	Mv	Rp	Rp	Mv	Mv	Rp
	*Rp	Sk	As	An	Oi	Mv	Oi	Oi	Oi	Mc
	*Em	Gp	Oi	Oi	Rp	Em	Dl	Cf	Mm	Mv
	*Pc	Cc	Mv	Mv	Mx	Oa	Mm	Mm	Ma	Tb
	*Mv	Ta	Mx	Mx	Ee	Mg	Cf	Mt	Cf	Gm
	*Gm	Da	Er	Ee	As	Sc	Ds	Dl	Ds	Cc
	*Dm	Ma		Sc	Dl	Dl	Gm	Tb	Mt	
	*Ac	Mp		Dm	Cc	Ma	Os		Gm	
	*On	Ee		Ol	Ol	Os			Tb	
	*Ap			Cf	Ou	Go			Cc	
	**Oi			Go	Sk	Mm			An	
	**Cc			Mm	Gp				Dm	
	**Cs				Go					
	**Di									
	**Cg									
	**Mt									
	**Sp									
	**Cm									
	**Cr									
	**Sl									
	**Ha									
	***Mm									
	***Lr									
Overall species	24									

*Present study **Durban Museum records *** (Nemakhavhani, 2013 unpubl. Msc report) **** Ditsong Museum record.

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Table 6.2. Small mammal species and species abbreviated caught at the Soutpansberg Mountain and other altitudinal studies in South Africa, table modified from study of Kok *et al.*,(2012).

Species	Code	Species	Code
Acomys subspinosus	*As*	*Mastomys natalensis*	*Mt*
Acomys spinosissimus	*Ap*	*Micaelamys granti*	*Mg*
Aethomys chrysophilus	*Ac*	*Mus munitoides*	*Mm*
Aethomys ineptus	*Ai*	*Myomyscus verreauxii*	*Mx*
Micaelamys namaquensis	*An*	*Myosorex varius*	*Mv*
Cricetomys gambianus	*Cg*	*Mystromys albicaudatus*	*Ma*
Crocidura cynea	*Cc*	*Otomys auratus*	*Oa*
Crocidura flavenscens	*Cf*	*Otomys irroratus*	*Oi*
Crocidura maquasiensis	*Cm*	*Otomys laminatus*	*Ol*
Crocidura mariquensis	*Cr*	*Otomys angoniensis*	*On*
Crocidura silacea	*Cs*	*Otomys saundersiae*	*Ou*
Suncus lixus	*Sl*	*Otomys sloggetti*	*Os*
Dendromus melanotis	*Dl*	*Rhabdomys pumilio*	*Rp*
Dendromus mesomelas	*Ds*	*Saccostomus campestris*	*Sc*
Dendromus mystacalis	*Dm*	*Steatomys kebrsii*	*Sk*
Desmodillus auricularis	*Da*	*Steatomys pratensis*	*Sp*
Elephantulus edwardii	*Ee*	*Tatera afra*	*Ta*
Elephantulus myurus	*Em*	*Tatera brantsi*	*Tb*
Elephantulus rupestris	*Er*	*Lemniscomys rosalia*	*Lr*
Gerbillurus paeba	*Gp*	*Hystrix africaeaustralis*	*Ha*
Graphiurus murinus	*Gm*	*Paracexerus cepapi*	*Pc*
Graphiurus ocularis	*Go*		
Macrocelides proboscideus	*Mp*		
Mastomys coucha	*Mc*		

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6.2. Small mammal species composition and their elevation ranges

Cluster analysis showed that species compositions at three sites (1400m- 1747m) in the Soutpansberg Summit Sour Veld were closely related. A similar situation was reported for Mount Kilimanjaro in Tanzania (Mulungu *et al.,* 2008). However, this was not the case in Soutpansberg Mountain Bushveld because 1000m site included two species found nowhere else. The trap success of *R. pumilio* increased with altitude in the same manner as reported in Swaziland (Monadjem, 1999), probably responding to an availability of more montane grassland patches at higher altitudes. This species is reported to be a grassland specialist (Skinner and Chimimba, 2005). Temperature could also play a role because, according to Delany and Happold (1979), this species avoids warmer altitudes and move to cool high-lying montane habitat in Kenya. However, other studies showed that *R. pumilio* are adapted to a variety of climates, including hot deserts (Haim, *et al.,* 1998).

M. namaquensis and *R. pumilio* dominated the catches, exhibiting a similar trend to previous studies (Bond *et al.,* 1980; Avenant, 1997; O'Farrell *et al.*, 2008; Kok *et al.,* 2012; Table 6). *M. namaquensis,* a rock specialist (Skinner and Chimimba, 2005), was found at all altitudes, *E. myurus,* another rock specialist, was absent from lower lying areas probably due to reduced rock cover and not climate because it is abundant in suitable rocky habitat at low altitudes in other areas (e.g. on the Limpopo river: Gaigher, pers. Comm.).

The low number of *O. angoniensis* in catches was not surprising since this species often tend to be underestimated due to their trap shyness and it also do not occur in rocky areas (Bronner and Meester, 1988). Several studies have reported that this species was generally restricted to an altitude that does not exceed 2500m above sea level (Misonne, 1974; Rautenbach, 1982 cited in Bronner and Meester, 1988). In the current study the species was only collected at altitudes of 1600 and 1747m, but they have been collected at 1350 m in another study area (Gaighjer, pers. Comm.). This species only occurs in numbers at its preferred Savanna habitat (Skinner and Chimimba, 2005).

Based on the unpublished Ditsong Museum records, a sibling species *O. irroratus* was recorded in the Soutpansberg Mountain 89 years ago. Since then this species has never been sampled in the Soutpansberg. It has not been recorded in the study site and also seem be

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absent from other sites where it had been recorded previously. The cause of decline or disappearance of this species is still unknown, but it is suspected to have been impacted on by climate change and bush encroachment (Taylor, pers. Comm.; Robinson and Elder, 1987).

Only one individual of *G. murinus* was captured during this study but it is known to be common in forests throughout the study area (Gaigher, pers. Com). Several studies confirmed that this species can occasionally be found in rocky habitats (Rowe-Rowe and Meester, 1982; Wirminghaus and Perrin 1993) but it is mainly arboreal which explain the low number recorded. This species also occupies wide altitudinal ranges in the Kilimanjaro, Tanzania (Mulungu *et al.,* 2008) and North Eastern Cape (Lynch, 1989).

A. *ineptus* was collected at all sampling localities but numbers declined at higher altitudes. It seems to prefer lower altitudes because it also occurs at lower altitudes in the southern part of the country (Linzey *et al.,* 2003).

This study also found the only individual of *A. chrysophilus* at high altitude (1600m), but this is in contrast with another study which suggested that this species seem to be endemic to lower elevation in the northern part of Limpopo Province where it is adapted to warm climate (Linzey *et al*., 2003).

A. spinosissimus was only recorded below 1200m and this is in line with studies in the Udzungwa Mountain National Park, Tanzania where it occurred at altitudes between 300 and 800m (Stanley *et al.,* 1998; Stanley *et al.,* 2007).

The present study found that *M. varius* only occurs at higher altitudes. Several studies found that this species dominated high altitudes such as at Cathederal Peak (Rowe-Rowe, 1977), Giants Castle (Rowe-Rowe and Meester, 1982) and the Sneeuberg of South Africa (Kok, 2012). This species is abundant in wetlands of Lajuma, Soutpansberg at an altitude of about 1200m above sea level (Nemakhavhani, 2013).

The species composition at the study site was distinct from all other communities and only shared 20% of species with its closest neighbour, Free State Grasslands of the Drakensberg (QwaQwa) (Avenant, 1997), but, was completely distinct from all other small mammal

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communities studied in the Great Escarpment (Fig. 6.1). Four species (*M. namaquensis, R. pumilio, M. varius and G. murinus*) were also present in the Free State area.

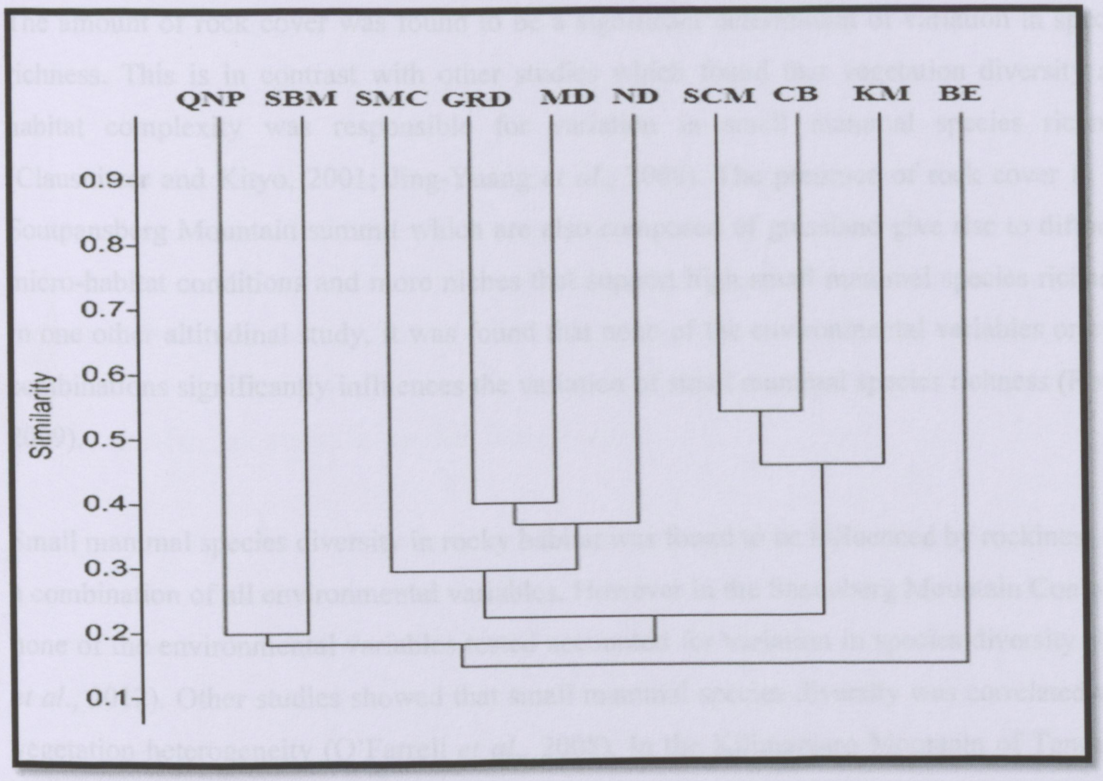


Figure 6.1 Cluster analysis base on Jaccard's showing similarities of small mammal species composition on different altitudinal studies in South Africa. Cape Fold Mountains: SCM (Southern Cape Mountains; Bond *et al.*, 1980); CB (Cedarberg Mountain, Rautenbach and Nel, 1980); KM (Kammannasie Mountains, Nel *et al.*, 1980); BE (Bokkeveld Escarpment, O'Farrell, 2008). Central Drakenbeg Mountain: SMC (Sneeuberg Mountain Complex, Kok et al., 2012); GRD (Giant Castle Game Reserve of the Drakensberg; Rowe-Rowe and Meester, 1982); ND (Natal Drakensberg, Bowland and Perrin, 1993); MD (Maclear District of the Northern Eastern Cape in the Drakensberg, Armstrong and van Hensbergen, 1996); QNP (Qwaqwa Qwaqwa National Park of the Drakensberg, Avenant, 1997) and SBM (Soutpansberg Mountain) based on present study.

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6.3 Environmental predictors of small mammal species richness, diversity and absolute abundance (Minimum Number Alive).

The amount of rock cover was found to be a significant determinant of variation in species richness. This is in contrast with other studies which found that vegetation diversity and habitat complexity was responsible for variation in small mammal species richness (Clausnitzer and Kityo, 2001; Jing-Yuang *et al*., 2008). The presence of rock cover in the Soutpansberg Mountain summit which are also composed of grassland give rise to different micro-habitat conditions and more niches that support high small mammal species richness. In one other altitudinal study, it was found that none of the environmental variables or even combinations significantly influences the variation of small mammal species richness (Rowe, 2009).

Small mammal species diversity in rocky habitat was found to be influenced by rockiness and a combination of all environmental variables. However in the Sneeuberg Mountain Complex, none of the environmental variables tested accounted for variation in species diversity (Kok *et al*., 2012). Other studies showed that small mammal species diversity was correlated with vegetation heterogeneity (O'Farrell *et al*., 2008). In the Kilimanjaro Mountain of Tanzania, habitat complexity and heterogeneity was found to influence variation of species diversity (Mulungu *et al.,* 2008).

However the relative abundance (MNA) of all small mammals combined is significantly influenced by rockiness as opposed to other studies which suggested vegetation height as the main driver (Kok *et al*., 2012).

Species richness increases significantly with an increase in altitude, which does not conform to the general pattern of a peak in small mammal richness at intermediate elevations (Patterson, 1989; Goodman and Carleton, 1996; Goodman *et al.,* 1996; Goodman and Rasolonandrsan, 2001; Brown, 2001; McCain, 2004; 2005; Stanley and Hutterer, 2007; Rowe, 2009) and a decrease with increase in altitude (Rowe-Rowe and Lowry, 1982; Rowe-Rowe and Meester, 1992; Amstrong and van Hensbergen, 1996; Monadjem, 1999; Kasangaki *et al.,* 2003; Benedek, 2003). This discrepancy could be due to the fact that different vegetation types were sampled.

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Although Shannon and Simpson indices increase with an increase in altitude, but this is not statistically significant. Diversity is affected by evenness and at the study site evenness declines at higher elevation due to dominance one species i.e. *R. pumilio*.

6.4 Body size

Altitude significantly influence the variation of *A. ineptus* body mass, but the pattern for all four small mammal tested did not follow Bergman's Rule. This is consistent with the results of other studies on mammals (Smith *et al.*, 1998; Meiri and Dayan, 2003), particularly for rodents (Medina *et al.*, 2008). The hypotheses that four small mammal species (*M. namaquensis; A. ineptus; R. pumilio* and *E. myurus)* of the western Soutpansberg Mountain comply with Bergman's Rule can therefore be rejected.

Changes in body mass of *A. ineptus* and *M. namaquensis* over season is common in most rodent species where body mass tend to be greater in summer than in spring and winter. This could be due to greater food availability in summer than in winter and for example has been found to occur in *Saccostomus campestris* in South Africa (Ellison *et al.,* 1993).

6.5 Demography

M. namaquensis, A. ineptus and R. pumilio was found to be reproductive active (scrotal and perforate) during warm seasons. Juveniles and pregnant females of *R. pumilio* were captured in almost all seasons. Other studies found that *R. pumilio* were also reproductive active throughout the year (Skinner and Chimimba, 2005).

6.5. Conclusion and recommendation

A. ineptus, M. namaquensis and *R. pumilio* were the most abundant species in wide range of altitudes. Modelling showed that variation in small mammal species richness was influenced by percentage rockiness of the area. Small mammal species richness significantly increase with increase in altitude, species diversity did not significantly increase with altitude. Small mammal abundance (MNA) was not influence by variation of season and altitude. Elevation

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in the study area was found not to have any significant impact of on morphological adaptation of in any of the four species stated as predicted by Bergmanns' Rule.

In terms of conservation status none of the recorded small mammal is Vulnerable, Endangered or Critically Endangered based on latest IUCN Red List assessment (Friedmann and Daly, 2004). High altitudes of the Soutpansberg are of conservation significance since they host more species of small mammals. Since mountains are fragile ecosystems proper planning need to be implemented when developing this area. Small mammals may be driven towards local extinction if planning is not adequate. Small mammal communities' assemblage structure may change and may be dominated by species (e.g *M. natalensis*) that prefer disturbed area. This research may serve as guiding tool during planning phase of any project that are to be undertaken in this area. *M. natalensis* which are mostly found in a disturbed area was not captured in rocky habitat sampled indicating that this area is relatively undisturbed.

Future research should also look at the impact of climate change on small mammals of the Soutpansberg Mountain with a focus on how climatic variables such as humidity, wind speed and atmospheric pressure shapes affect small mammal assemblage structure. It is recommended that other studies also be done on the northern slopes.

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APPENDIX 1: A TABLE SHOWING ENVIRONMENTAL VARIABLES MEASURED DURING THE SURVEY

Alt	Season	Mean T	Mon T	MaxT	Rain	rocks %	soil%	litter %	shrub %	herb %	grass %	Tree %	Tree Canopy %
1000	Spring	19.1	33.2	10.1	0.9	15	30	25	10	3.64	14.44	15	45
1000	Summer	20.9	34.9	11.1	18.6	15	30	25	10	3.64	14.44	15	45
1000	Autumn	17.9	31.1	10.1	260	15	30	25	10	3.64	14.44	15	45
1000	Winter	14.4	25.1	3.9	4.5	15	30	25	10	3.64	14.44	15	45
1200	Spring	18.9	32.4	9.3	2.8	5	25	10	15	4.24	24.24	8	26
1200	Summer	20.9	32	13.7	156.6	5	25	10	15	4.24	24.24	8	26
1200	Autumn	17.2	29.7	9.2	286	5	25	10	15	4.24	24.24	8	26
1200	Winter	13.6	23.9	3.3	2.2	5	25	10	15	4.24	24.24	8	26
1400	Spring	17.6	30.1	8.3	4.2	25	8.42	4.46	12	3.42	17.62	5	18
1400	Summer	19.8	31.2	12.3	120	25	8.42	4.46	12	3.42	17.62	5	18
1400	Autumn	16.5	28.3	7.8	140.5	25	8.42	4.46	12	3.42	17.62	5	18
1400	Winter	12.3	22.5	2.7	1.8	25	8.42	4.46	12	3.42	17.62	5	18
1600	Spring	16.7	29.2	7.4	4.7	40	12.42	5.62	14	5.42	28.42	0	0
1600	Summer	16.8	27	10.9	40.2	40	12.42	5.62	14	5.42	28.42	0	0
1600	Autumn	15.2	27.4	8.6	56.4	40	12.42	5.62	14	5.42	28.42	0	0
1600	Winter	10.9	19.7	-0.3	3.3	40	12.42	5.62	14	5.42	28.42	0	0
1747	Spring	16.8	29.4	7.9	5.4	37.32	12.4	7.34	11.53	3.95	35	0	0
1747	Summer	18	29.1	11.2	96.7	37.32	12.4	7.34	11.53	3.95	35	0	0
1747	Autumn	14.8	26.8	8.3	52.4	37.32	12.4	7.34	11.53	3.95	35	0	0
1747	Winter	11.4	18.9	-0.4	2.3	37.32	12.4	7.34	11.53	3.95	35	0	0

*Mean T (Mean temperature), Max T (Maximum temperature), Min T (Minimum temperature).

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A MODEL TO FACILITATE LANGUAGE ACQUISITION/DEVELOPMENT IN CHILDREN BETWEEN 0 TO 3 YEARS IN RURAL COMMUNITIES OF MAKHADO MUNICIPALITY, LIMPOPO PROVINCE

BY

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A thesis submitted in fulfilment of the requirements for

Doctor of Philosophy

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August 2019

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Declaration

I, Mpho Madzhie, hereby declare that a thesis on **"A model to facilitate language acquisition in children between 0 to 3 years in the rural communities of Makhado municipality, Limpopo Province"** for the Doctor of Philosophy in Psychology, at the University of Venda, hereby submitted by me has not previously been submitted for a degree at this or any other institution, and that it is my own work in design and in execution and that all reference material contained therein has been duly acknowledged.

Signature: Madzhie

Date: 23/08/2019

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Dedication

This thesis is dedicated to my one and only Sigebe Kolani Amos, my mom Madzhie Maria Ndidzulafhi aand my children, Sigebe Gundo Amos-junior and Sigebe Mukundi Pretty. You have made me strong, better and more fulfilled than I could have ever imagined. I love you to the moon and back.

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This thesis is a great achievement of my PhD journey, which I walked step by step accompanied with excitement, encouragement, hardship, trust and frustration. Although only my name appears on the cover page many people have contributed to the accomplishment of this huge task. I would like to acknowledge and extend my heartfelt gratitude to the following people who have made the completion of this thesis possible.

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- A very special gratitude goes out to SAHUDA for helping and providing the funding for my work.

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Abstract

The aim of the study was to develop a conceptualized model that will enhance language acquisition of children between 0 and 3 years. Language is a use of words and symbol to convey message, or communication. Generally, from birth to the age of four months children express their needs through crying and are soothed by the sound of voices or by low rhythmic sounds. When adults talk to children, children later imitate adult's tongue movements and start to make sounds, coos and gurgles. Providing children with developmental stimulation and exposing them to learning opportunities increases their cognitive and social-emotional skills/abilities. Strategies to enhance language development are fundamental in children and can reduce many literacy related problems in later childhood. The objectives of the study are: to describe activities done by caregivers to influence language development; to identify factors that influence language development; to describe the importance of language development and to explain the disorders that are associated with language development. This study was qualitative in nature and it utilised an explorative design. This research design enabled the researcher to investigate the nature of acquisition comprehensively as well as the development of language and other factors that are related to it. The study was conducted at Vhembe District Municipality. Three villages were selected, namely Tshikuwi, Tshirolwe and HaMatsa villages, which are found in Makhado Municipality under Limpopo Province, South Africa. Purposive sampling was used to sample participants for the study. The individuals selected were those judged to have certain special characteristics as well as the ability to provide in-depth information for the purpose of the study. Thirty participants were selected to participate in the study. The semi-structured face to face interview and the interview guide with open-ended questions were used for data collection. Pre-testing of the interview guide was done to check if the guide would produce the expected results, three women from three different villages were selected for pretesting. All questions in the interview guide were addressed during data collection. Collected data were transcribed and analysed using thematic content analysis. The study adhered to the following research ethics: informed consent, anonymity, confidentiality, voluntary participation, no harm to the participants and dissemination of results.

The study revealed that language is an important tool which is used to convey information from one person to the other. The findings indicate that language helps children to communicate and relate with other people. Language was also explained as a tool which is used to educate children, either at school or at home. The study shows that when children are learning language, they will also be stimulating their reasoning, thinking and problem-solving skills. In addition, it was also indicated that cognitive development reduces problems such as

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poor language development, a low self-esteem and isolation. The findings of this study show that there are a number of activities that can be used by caregivers and parents to foster the development of language in children. Those activities include, communicating with a child, reading of books, watching TV, naming of objects and explaining meaning of words. The study also identified several environmental factors that can be used to foster the development of language in children. The following environmental factors were identified in the study: communication, parental level of education, home socioeconomic status, caregiver's personality and the availability of other children in the family. Lastly, the findings show that there are many disorders that may affect the development of language in children. The language disorders that the study identified include expressive language disorder, dyslexia, and inability to understand spoken. However, the study also reveals that these disorders may be treated. The findings of this study lead to the development of a conceptualized model to facilitate language acquisition in children between 0 and 3 years was developed. The meaning of one concept, namely reinforcement was explained in detail, in order for users of the model to understand its operational definition in the model. Reinforcement was explained because it has a diversity of meanings. The model enabled the researcher to create a link between research and what is happening in a society. Model validation was done to verify if the developed model relates to practical life, research and language development. The model for this study was validated for its applicability and usability. The drafted model was given to psychologists, speech therapists and parent to determine its usability and applicability.

Keywords: language, language acquisition, language development model, language disorders.

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List of abbreviations and acronyms

ADHD	Attention Deficit-Hyperactivity Disorder
BSD	Bayley Scale of infants' Development
CAPS	Curriculum and Assessment Policy Statement
CAS	Childhood Apraxia of Speech
CD	Conduct Disorder
CGFS	Curriculum Guidance for the Foundation Stage
CLP	Children Literature Programme
ECE	Early Childhood Education
EYFS	Early Years Foundation Stage
FBE	Free Basic Electricity
IQ	Intelligent Quotient
LAD	Language Acquisition Device
LASS	Language Acquisition Support System
LD	Language Disorders
NEEDU	National Education Evaluation and Development Unit
ODD	Oppositional Defiant Disorder
PID	Patient Identification Number
RDP	Reconstruction and Development Programme
SABC	South Africa Broadcasting Corporation
SID	Study Identification Number
SES	Socio-economic Status
UHDC	University Higher Degrees Committee
WHO	World Health Organization

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CHAPTER 1: INTRODUCTION

1.1 Background to the study

Language is defined by Lao (2015) as the form, function, and use of symbols (i.e., spoken words, sign language, written words, and pictures) in a rule-governed manner for communication. It is important for children to acquire language skills, as it helps them to relate with their parents and peers, to interact with others socially through life and to get their needs met (Brannagan, 2015). Language also helps children to understand and express their thoughts and feelings, to share meanings with others and to participate in cultural activities. Language is an instrument for learning. Children learn through what they hear from their parents, caregivers and peers (Gooden & Kearns, 2013; Parker, 2015). The way in which parents talk to children can influence learning, understanding and motivation to learn. It is important for parents to expose children to a stimulating home environment. Parents should see themselves as tools to help their children to learn language. It is important for parents to teach children about letters and words and to expose children to learning activities such as storytelling. While doing the literature I concluded that the quality of parent–caregiver interaction plays a significant role in the acquisition of language by children. The language used by parents is important in the children's language development. Parents are the most suitable tools to foster language development in children since they spend more time with their children during the infancy stage (from birth to three years) than any other person.

The infancy stage is the most important stage of development. According to Erickson (in Meyer, Moore & Viljoen, 2002), these early years of life have an important influence on later development. The first three years of life, which are the years of language acquisition, are believed to be a sensitive period in biological and social development (Bornstein, 1989). Early language development makes an important contribution to the children's performance when they enter pre-school. Children's understanding, use of vocabulary and their use of two-three-word sentences at 24 months are strongly associated with their later performance. Roulstone, Law, Rush, Clegg and Peters (2011) argue that children's language adds value to their development irrespective of their social background. Failure to learn a language at an early stage may affect the children's learning during pre-school years. The ability to learn language during this period also helps to develop the cognitive abilities of children. Swartz, Rey, Duncan and Townsend (2011) indicated

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that there is a strong link between early language development and development of cognitive abilities.

According to Vygotsky's theory of cognitive development, language is the most crucial tool in the acquisition of cognitive abilities. Initially, young children do not use language to think. However, gradually, language and thought merge and thinking is then expressed in the form of language. As children develop, language serves different purposes. During the social stage, which is between birth and the age of three years, children use language to express simple thoughts and feelings and when they grow up, they use it for educational purposes (Swartz et al., 2011). The researcher concluded that it is important for children to learn language since it stimulates their cognitive development. To help children learn language parents are important in the overall development of children especially during the infancy stage. However, it is not always possible for parents to play their role in the development of language in children, since some parents are employed.

The increase in female labour participation reduces the time they spend with their children, as well as the child's ability to learn language. The full-time employment of mothers has become a custom in most of countries. In United State, statistics revealed that 75% of mothers work fulltime in the first year of their child's life (Pelcovitz, 2013). Singh (2018) reported that there is a substantial increase in labour force participation of mothers in India. In Canada, Uppal (2015) reported that the labour force participation of mothers increased from 42% in 1976 to 58% in 2014. In Nigeria, The Global Economic (2019) reported an increase of women participation at labour force from 47.11 in 1991 to 50.55 in 2018. The increase in women labour force participation was also reported in South Africa, which is 41.8 % to 48.8% between 1995 and 2005. In addition, in all provinces, Limpopo displayed the highest average annual growth rate of 7.9 % from 1995 to 2004 (Van de Westhuizen, Goba & Oosthizen, 2004). The Women Empowering and Gender Equality Bill No. B50 of 1996 gave women an opportunity to enter the economic market (The Constitution of the Republic of South Africa, 1996). In South Africa, since the amendment of this bill, many women are now employed resulting in many children being placed in day care institutions. In South Africa, the researcher observes that, there is also a possibility that children attend day care centers where the language spoken is different from their mother tongue. In this way, children could be exposed to a different language. Children who are exposed to different languages at the infant stage have been reported to have problems with producing vowels correctly.

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Some of these working parents who are unable to spend time with their children and caregivers are not use the activities that influence language development. Parents do not engage in activities such as the use of sign language, reading books and storytelling. A study by Rowe and Goldin-Meadow (2009) on child-directed speech, shows that most parents who use sign language to foster communication with their children are from developed countries. Butterworth (2003) argues that babies communicate with sounds and sign language. Those sounds and signs foster the development of language (Rowe & Goldin-Meadow, 2009). However, for those sounds and signs to change into language, the influence of external factors such as home environment and caregivers' interaction is needed. Parents and caregivers are not aware that interaction with a child influences the development of language later in life and they are also not aware of the importance of toys in the development of language (Sorsby & Martlew, 1991). Tamis-LeMonda and Rodriguez (2009) point out that it is important for parents to provide learning materials, such as toys and books, to stimulate language development.

However, in South Africa, most households lack learning materials and educational toys. This is due to high rates of parental illiteracy and poverty. Most households do not have materials that enhance the acquisition of language. Book-sharing is one of the best methods of enhancing literacy development (Bornstein & Putnick, 2012). Although book-sharing is important in enhancing language, parents do not view themselves as agents of their children's language development and because of this, they do not read books for their children. Studies show that children who are helped in the acquisition of language do better at school than those who are not helped when they are toddlers (Bornstein & Putnick, 2012; Robert, 2012). The knowledge of the importance of language development and cognitive abilities invites different institutions in South Africa, such as SABC programmes and Department of Basic Education, to address and help children to develop language.

Several institutions are contributing towards children's language development. The Department of Education in South Africa has introduced programmes that influence children's language development. With the help of Sanlam and the South African Broadcasting Corporation (SABC) education, the Department of Education has also introduced educational programmes such as Takalani Sesame, which is hosted in five different languages, thus giving children an opportunity to learn. Such programmes are aimed at boosting early development (Department of Basic Education, 2013/2014). SABC radios also offer programmes, such as Denzhe in Phalaphala FM, to encourage a passion for reading in children (South Africa Broadcasting Corporation Education,

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2013). Although the Department of Education is enhancing literacy in children, caregivers have a task to enhance language development in a children's early years (South Africa Broadcasting Corporation Education, 2013).

The national library of South Africa has also developed several programmes, such as Children Literature Programme (CLP) which support the development of children's literature in South Africa, to enhance literacy in children. Klein and Rye (2004) and Magwaza and Edwards (1991) indicate that providing children with developmental stimulation and exposing them to learning opportunities increases their cognitive development. Trocme and Caunce (1995) argue that strategies to enhance language development are of fundamental importance in infants and can reduce many literacy-related problems in later childhood. Research by Law and Conway (1992) shows that such strategies should aim at the caregiver/child interaction.

The issue of language development is not only a South African concern, but it is also a global one. The Millennium Development Goal two, for example, seeks to promote primary education not only in South Africa, but globally as well. To achieve this goal, it is important to enhance language development because early language development has an impact on later educational achievement. Grantham-McGregor, Cheung, Cueto, Glewwe, Richter, Strupp, and the International Child Development Steering Group (2007) indicate that only 57% of the children in African communities achieve minimum reading level. Enhancing language development activities such as reading a book in the early years of development has been identified as a method that helps children to read later at primary school.

The researcher argues that South Africa requires leaders who can express their views and that can be achieved through language. The current teaching curriculum (e.g. CAPS- Curriculum and Assessment Policy Statement) requires students who can express their thoughts and views. CAPS aim to move away from a racist, apartheid rote model of learning and teaching to a liberating, nation-building and learner-centered outcomes-based initiative (Department of Basic Education, 2013/2014). Students who do not acquire language properly may have a problem handling this kind of curriculum, more especially at primary school level. The root of literacy lies in the development of language. The researcher observed that parents and different institutions are important in the development of language. However, there are certain health conditions and psychological conditions that interfere with the development of language in children.

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South African communities face problems such as poverty (Statistics South Africa report, 2011), low birth weight (Statistical release, 2017) and cerebral palsy (Pretorius & Steadman, 2017). All these problems have a strong correlation with delayed language development. Statistics South Africa report (2011) shows that 23.0 million (45%) of the people in South Africa are poor and 10.2 million (20.2%) are extremely poor. Van Toorn, Laughton and van Zyl, (2007) highlights that 15.7 % of the children in South Africa suffer from cerebral palsy. Cerebral palsy is defined as a condition characterized by paralysis, weakness, incoordination, or unusual motor function due to injury in the motor areas of the brain (Murra, 1995). The poor motor control of the mouth and tongue in children with cerebral palsy makes it difficult for them to produce speech and voice production (Alliance Annual Report, 2015). Children who come from poor homes and those who suffer from cerebral palsy and low-birth weight experience delayed language problems.

Apart from poor social and health conditions, there are also psychological conditions that bring challenges during language development. These challenges are referred to as language disorders and they affect many areas of learning in children. Such language disorders include children being unable to form verbal or written clear and complete sentences. Often, this is because the children have poor vocabulary. Children with language difficulties find figurative and interpretive language very difficult to understand. These are the children who have great difficulty understanding metaphor (Tamis-Lemonda, Bornstein & Baumwell, 2001).

Language disorder is a global problem. Several studies have reported prevalence of language disorders in children. Broomfield and Dodd (2004), reported that in UK the prevalence of language disorders in children between 0-2 years is 16. 3 %. In Sydney at Australia the language disorder prevalence was found to be 16.5% (McLeod & McKinnon, 2007). Similar results were yielded by study conducted in the USA, indicating 15% of 2-year-olds presented with expressive language delays (Evans, 2006). The following prevalence of language disorders was reported in developing countries: 7% in Kenya (Muga, 2003), 20% in Ghana (Biritwum, Devres, Ofosu-Amaah, Marfo, & Essah, 2000) and 10% in East Africa (Jochmann, 2006). Statistic south Africa (2004), reported that 4.2 % of children in south Africa have cognitive difficulties, 3.6 % had hearing difficulties and lastly, 2 % have communicating difficulties. A study conducted by Van der Linde, Swanepoel, Sommerville, Glascoe, Vinck and Louw, (2016), at Tshwane District, Gauteng province reported 13% of infants between 6 and 12 months from an underserved primary healthcare context presented with language disorder.

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1.2 Problem statement

Language disorders are the most common impairments in early childhood, and have negative long- term effects on academic, psychological and social development (Van de Lende, et al., 2016). Language disorders are global problem and the prevalence of language disorders are reported in both developed and developing countries. South Africa children, just like with other developing countries children, are at a higher risk for developing language disorders, due to high prevalence of conditions such as poverty, HIV, low birth rate, and cerebral palsy (Kritzinger, 2000). Furthermore, a study conducted by Van De Linde, et al., (2009) indicated that the methods used to identify children's language disorders are limited and the referral system in rural areas is ineffective. To address language related problems, Van De Linde and Kritzinger (2013), suggested the primary intervention and parents training focusing on preventing and reducing language disorders and stimulating language development. I therefore, find it important to develop a model to facilitate language development in rural areas which will serve as a primary intervention to stimulate language disorder.

Distinct countries use diverse activities to enhance the development of children's language. Because of this, it is important for researchers to find language fostering activities suitable for South African children. Vally (2012) argues that South African children are at a developmental disadvantage compared to children from other countries. Statistics show that only 10 – 41% of parents provide their children with language stimulating materials and 11 – 33% of parents actively involve their children in language stimulating activities (Walker, Wachs, Gardner, Lozoff, Wasserman, Pollitt, Carter & the International Child Development Steering Group, 2007). The model addresses the activities that may be used in rural areas to foster children's language development.

The researcher also notices that, in South Africa, from birth, the child is assessed over (at clinics on a monthly babies) several developmental stages. These checkups focus mainly on the body development and the nutrition of the baby. Parents are even given presentations on how to feed their babies, yet language development is not considered. The model developed will inform parents about the activities and how to create a language stimulating environment to facilitate language development of children.

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1.3 Significance of the study

There are different stakeholders that will benefit from this study, for example, children, parents and caregivers, speech/language therapists and psychologists, the Department of Education and language policy developers. The study focuses on the factors (activities and environmental) that enhance the development of language in children. As indicated above, the study developed a conceptualized model that can be used by mothers in Makhado Municipality to enhance the development of their children's language.

Children

This study examined strategies used by mothers in Makhado Municipality to enhance the development of their children's language. This study will help children to learn language better because parents will be aware of the environment and activities that can influence language. Acquiring language skills will help children to express their needs and feelings, and to relate with other people. It will also help them to perform better at school.

Parents and caregivers

Young mothers in Makhado Municipality may be educated of diverse ways that are used by other experienced mothers to enhance the development of their children's language. The study explored the usage and knowledge of different techniques used by mothers in Makhado Municipality to enhance language development in children. Not many studies have been done on the acquisition and the development of language among the Makhado Municipality children. For this reason, the researcher collected information from participants and build a picture on language acquisition based on participants' ideas. Parents and caregivers may benefit from acquiring knowledge about several factors that can enhance children's language acquisition. They will be aware of different methods and this may enable them to contribute in the development of their children's language.

This study will show parents how early childhood education contributes to the development of language in children. Some parents work while others are students, and this results in them spending very little time with their children. This, in turn, retards the development of language in children. This study will help parents become aware of the importance of playing and talking to their children, especially when the children are between 0 and 36 months. The study will help caregivers and parents to see themselves as tools to enhance the development of language in

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their children. The study came up with numerous activities that might influence the development of language. This may help parents to know several activities that they can use to enhance the acquisition and development of language in their children. Most people in rural villages do not see language disorders as a problem. These are problems that need to be treated at toddler stage because they may affect child-learning during pre-school years. This study may help caregivers and parents to know if their children have language disorders and seek for treatment.

Speech/ language therapists and developmental psychologists

The study may also benefit professionals, such as speech/ language therapists and psychologists. Professionals, such as speech therapists and counsellors, who work with language problems in children will come up with topics for awareness campaigns, from which parents and caregivers will gain information. The study revealed the activities that are used by mothers and caregivers to enhance the development of language in their children. This may help professionals to develop language tests that are suitable for children in rural communities.

Department of Education

Government departments such as the Department of Education, may use the findings of this study to create programmes that may foster language development at preschools. The South African government concentrates on reading and forgets about language acquisition. For example, the National Department of Education South Africa has released a national reading programme for Grades R to 12 students (Cook, 2013). This programme seeks to strengthen reading and literacy outcomes. Furthermore, the head of the National Education Evaluation and Development Unit (NEEDU), Dr. Nick Taylor, has called for reading to become a national priority in all schools. If the government is to achieve this goal of strengthening reading and literacy, it should start fostering language acquisition at the toddler stage during language development stage.

Language policy developers

Using the findings of the current study, professionals, such as government policy makers, may be helped to develop policies that will enhance language development. Most policies that exist focus more on language at primary school level, forgetting that language starts at birth. Language acquisition affects later development such as reading and learning. In South Africa, literacy research and development form part of language planning and language policies. Although language planning concentrates on areas, such as increasing literacy and language polices, not much emphasis has been put on the early years of childhood. The researcher notices that policy

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developers have not acknowledged and acted on the importance of early childhood in literacy development. All children need a good foundation with language to become empowered members of literate societies (Robert, 2012). South Africa ignores literacy education of young children. For example, stories, rhymes and wordplays, which would enhance the development of language in toddlers, have been lost (Centre for African Studies, 1999). This study will help policy makers to consider language acquisition since it is vital for later learning.

1.4 Rationale of the study

Several studies have been conducted on the development and acquisition of language in children. For example, the World Health Organization (WHO, 2004) did a study on the importance of caregiver-child interactions for the survival and health development of young children. The study shows the importance of early communication between caregivers and children in the development of language in children. Saffran, Senghas and Trueswell (2001) also conducted a study in New York on the acquisition of language by children. The study investigated how children pack words into meaning full units. In 2015, Ojuondo conducted a study on the influence of play on the development of language skills among preschool children in Kisumu central sub-county in Kenya. In South Africa, Mosca, Kritzinger and Van de Linde (2015) also conducted a study on language and communication development in preschool children with visual impairments.

However, the current study examines language development from a unique perspective different from the above-mentioned studies. This study investigates language development from a vhaVenda perspective. The study was done in Limpopo Province, whereas other studies were conducted outside the Limpopo Province. Moreover, other studies focused on the development of language in children with psychological and physical disorders. For example, Gernsbacher, Morso and Grace (2015), conducted a study on language development in children suffering from autism, while Shawkat (2013) focused on the linguistic development of children with cerebral palsy. The current study, however, focuses on the acquisition of language in all children irrespective of their conditions. The findings of this study will help parents and caregivers to stimulate the development of language in children regardless of the children's health conditions.

Furthermore, the researcher noticed that most of the studies also focused on the development of second language acquisition. A good example is a study which was conducted by Meisel (2009) titled 'Second language in early childhood', the current study concentrated on stimulating first

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language acquisition. The current study also revealed the strategies that are used by mothers and caregivers to enhance the development of language in their children.

The aim of this study is to develop a conceptualized model that will foster the development of language in children. Other language acquisition studies focused on the development of language during preschool years and in the classroom. Mosca, et al. (2015), for example, conducted a study on language and communication development in preschool children with visual impairments. The current study examines activities done by parents and caregivers to influence language development before preschool years. It acknowledges the importance of early child development of language as indicated in the literature which argues that when children learn language skills early, these skills help them later in their education (Swart, et al., 2011) and socialization (Van Vuuren, 2012).

1.5 Aim of the study

The study sought to develop a conceptualized model that will enhance language acquisition in children.

1.6 Objectives of the study

The study was guided by the following objectives:

- To explore the importance of language development in children;
- To describe activities that influence language development;
- To explore factors within the home that influence language development;
- To identify disorders that are associated with language development;
- To validate the conceptualized model that would have been developed.

1.7 Research questions

- What is the importance of language development in children?
- What activities influence the development of language?
- What factors within the home may influence language development?
- What disorders are associated with language development?

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1.8 Delimitation of the study

The study was limited to parents and caregivers who had raised two or more children, whose mother tongue is Tshivenda and who reside in Tshikuwi, Tshirolwe and Ha-Matsa villages. The study only focuses on language development in children without taking in consideration of other children development such as physical development.

1.9 Definition of key concepts

Caregiver

Caregiver is a person who looks after infants and young children (Tamis-Lemond & Rodriguez, 2009). In this study, a caregiver is someone who looks after a child who is younger than three years. This person provides physical and emotional care to a child and help the child to acquire language.

Communication

Communication includes any verbal or nonverbal behaviour (whether intentional or unintentional) that influences the behaviour, ideas, or attitudes of another individual (Shulman & Capone, 2010). In this study communication refers to the verbal and nonverbal interaction between children and their caregivers.

Language

Language includes the form, function and use of a conventional system of symbols (i.e., spoken words, sign language, written words, and pictures) in a rule-governed manner for communication (Lao, 2015). In the current study, language is a way in which people communicate, and it consists of words and sounds.

Language Acquisition

Language acquisition is the process by which humans acquire the capacity to perceive and comprehend language, as well as to produce and use words and sentences to communicate (Berger, 2000). In this study language acquisition is the process in which children learn to convey message, their needs, feelings to their caregivers.

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Language delay

Language delay is when a child's language is developing in the right sequence, but at a slower rate (American Speech-Language Association, 2014). The study adopts this definition as it defined by American Speech-Language Association (2014).

Children

Children are young human beings who are not yet adults (Hornby, 2010). Children, in this study, are defined as people from 0 to 3 years.

1.10 Division of the thesis

Chapter one presents the introduction to the study by providing a problem statement. Aims, objectives and significance of the study as well as research questions and delimitation of the study are discussed in this study. The chapter also clarifies key concepts of the study.

Chapter two presents the theoretical framework of the study. Different psychological theories on language development and acquisition are also discussed in this chapter.

Chapter three provides the reader with relevant literature related to the research topic. Literature on language development is reviewed in detail to help readers understand the development of language in children.

Chapter four discusses the methods used to conduct the present study. This chapter discusses the research methodology that was used in the study.

Chapter five presents the results of the study. Collected data were analyzed thematically.

Chapter six discusses the key study findings. Findings are linked with the findings of other studies.

Chapter seven presents the model to facilitate language development. The researcher developed a model that could be used to facilitate the development of language in children.

Chapter eight presents the summary of the study. The conclusion and the recommendations of the study are also discussed in this chapter.

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1.11 Conclusion

Language is a use of a conventional system of symbols and words to communicate. It is important for children to acquire language skills because it helps them to relate with other people and to have their needs attended to. Parents are the most crucial tool in children's language development. It is important for parents to help their children. For example, they can start by communicating with their unborn children at the antenatal stage. This will help the babies recognise their mothers' voices. From birth, children communicate through crying. They use different cries for different purposes and, parents and caregivers learn to differentiate these cries. Parents and caregivers respond by meeting these needs and by talking to their babies. Parents introduce language to children by responding to their cries. This shows that, from birth, children are introduced to the language of their parents. The study aimed to come up with different factors that parents may use to enhance the development of language in children. The factors that foster the development of language in children was also explained by theories such as Noam Chomsky, Fredrick Siknner and Albert Bandura. The next chapter discuss the theories that addresses development of language in children.

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CHAPTER 2: THEORETICAL FRAMEWORK OF LANGUAGE DEVELOPMENT

2.1 Introduction

This chapter presents the theoretical perspective on language development in children. Several theories address diverse ways in which the development of language takes place. Although there are several theorists who address language development, this chapter only focuses on a specific theoretical framework. The specific theories that were selected by the researcher guided and directed the study.

2.2 The Theoretical Framework

There are three important mechanisms which contribute to the acquisition of language, namely conditional, imitating and innate language acquisition devices. Learning plays a key role in the acquisition of language. People grow up speaking the language that surrounds them. The study will be guided by three theories, namely Universal Grammar Theory, Learning Theory and the Social Cognitive Learning Theory. The researcher chose the above theories because they all put emphasis on the development and acquisition of language in children though in different dimensions. The selected theory addresses the activities and environmental factors that influence language development. The main theory of this study is the Learning Theory. However, to address the limitations of learning theory the researcher also chose other theorists who focus on the development of language in children. The selected theories are discussed next.

2.2.1 Universal Grammar Theory

The Universal Grammar Theory was developed by Noam Chomsky in 1959. Noam Chomsky believes that children are pre-programmed to learn language. Chomsky (1959) argues that the capacity for language used by children is not learned but that they are born with it. He claims that some universal features are common to all languages (e.g. verbs and subject) and are innate (Hetherington & Parke, 1993). Chomsky calls his theory the Language Acquisition Device (LAD). Chomsky (in Cook & Cook, 2005) states that the LAD is a constellation of interconnecting brain areas. According to Chomsky (in Louw & Louw, 2007), this mechanism is present from birth, but it depends on the maturation of cells in the cerebral cortex. According to Chomsky (1959) when children grow, they only learn the elements of their mothers' language, not the basic structure of

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language. The background of this study emphasized that parents are important tools to foster language development in children. Other theorists, like Lenneberg (in Ellis, 1984), also believe that language is an innate ability in people. Chomsky believes that humans are genetically pre-programmed to learn different languages (Edmonson in Bailey, 1978). According to Chomsky (1959), people have inherited universal principles and constraints that simplify the language process. He explains that children do not really learn language as they grow, but rather that grammar grows in their mind (Berk, 2010; Ellis, 1984; Lightbown & Spada, 1993; Swartz *et al.,* 2011). He believes that language development is linked to biological maturation and argues that children learn language the way they learn to walk (Louw & Louw, 2007). This means that people are mentally structured to acquire language. He further states that people are born with a mental machinery in place which provides them with the foundations of Universal Grammar (Bukatko & Daehler, 1995). This Universal Grammar provides a highly structured, but empty framework which can be filled with the details of any language (Louw & Edwards, 1997). Those details are gained through learning words from caregivers. The theory argues that children are born with a language acquisition device. However, the language devise needs to be filled with words used in a particular culture. This theory guided the researcher to find the activities that parents use to activate the children's language device.

This theory, however, does not indicate how children understand the meaning of the words. To make up for the limitations of this theory, the researcher used the Learning Theory to close the gap left by the Universal Grammar Theory. A major weakness of the Learning Theory, however, is its inability to explain how children pronounce words they have never heard. The Universal Grammar Theory however helped to close that gap. The Universal Grammar theory helped the researcher understand how the innate language device can be activated by parents and caregivers and the learning theory help to explain how children learn the meaning of words.

2.2.2 Learning Theory

Learning Theory was developed by Burrhus Fredric Skinner (1904-1990). The Learning Theory states that all behaviours including the usage of language are learned and that if individuals are given the right environment they can learn and imitate new things. Behaviourism emphasizes that language is determined by environmental influences. This theory addresses the research objective on the influence of the environment on language development and the activities that parents may do to influence language development. Behaviourist, Skinner (in Swartz, et al., 2011)

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describes language as a form of learned verbal behaviour and explains its acquisition in terms of operant conditioning processes. To address the objective on activities that can foster language development, Skinner argues that children need to be reinforced by parental approval or by responses of parents and caregivers to learn the language. Words that are rewarded continue to be used (Berk, 2010). Parents and caregivers should give more reinforcement to words and sentences that children pronounce correctly (Nietzel & Bernstein, 1994).

Tamis-LeMonda, et al. (2001) state that the more parents respond to the babies' sounds, the sooner the babies learn the language. The earliest stages of language acquisition seem to follow such a process of reinforcement (Louw & Edwards, 1997). According to Keenan and Evans (2009), learning through reinforcement and punishment is a powerful learning device for children. Children start by making sounds which become conditioned into syllables and then later into single-word utterances (Louw & Edwards, 1997). Literature reviewed in this study shows that when children imitate the language of those around them and receive correct language usage reinforcement from parents and caregivers, those words become conditioned. For example, if one gives a child an object and allows the child name it, and if the response is correct, one should reinforce the behaviour. This will ensure that the child continues to name objects (Louw & Louw, 2007). The Learning Theory of language acquisition also proposes that children learn the language by imitating what they hear from other people.

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Albert Bandura (cited in Bee, 1995) believes that children abstract certain linguistic principles through the process of imitation of others and then apply them to other utterances without necessarily having to hear them first. He referred to this as process abstract modeling (Swartz *et al.*, 2011). Imitation plays a vital role in various aspects of learning including language development in children (Bee, 1995; Van Vuuren, 2012). Parents help children to imitate words by adjusting their language when talking to young children so that the process could suit those children better. This is called motherese or child-directed speech (Louw & Edwards, 1997). According to Van Vuuren (2012), the child's first words are learnt by hearing and imitation. According to Bloom (1991), children tend to repeat phrases that they hear more often, for example bye-bye.

Skinner argues that language develops through the processes of reinforcement, imitation and shaping (Levine & Munsch, 2011). When babies make sounds and parents or caregivers respond to those sounds with a smile, children tend to repeat those words more often, and this, according

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to Skinner, is reinforcement (Levine & Munsch, 2011). In addition, Ansell and Van Blerk (2005) indicate that the home environment has an important influence on the development of language in children. Skinner argues that children learn words in different situations and when whose words are repeated several times, they tend to acquire those words. Skinner suggests three mechanisms to acquire language, namely association/classical conditioning, reinforcement and imitation (Freedman, Sears & Carlsmith, 1981). Skinner (in Taylor, Peplau & Sears, 1994) argues that when children learn novel words and those words are followed by something pleasurable, the words are more likely to be repeated. However, he stated that imitation occurs without reinforcements.

According to the Leaning Theory, optimal development is when children learn language, focus on the positive reinforcement and avoid all the aversive reinforcements. Skinner assumes that when children are exposed to a stimulating environment, they will be able to learn language. Pathology occurs when a child is given and exposed to a stimulating environment but is unable to learn language. The optimal development in Skinner's theory address the end product of the developed model which is language development.

Although the Learning Theory is used in this study, it has its weakness. Imitation in this theory does not explain how children come up with grammatical forms they have never heard before. However, although the theory has its weaknesses, the researcher used it because of its strengths. According to this theory, if children are exposed to a stimulating environment, such as an environment with reinforcement, they will optimally learn language, this is in line with the finding of this study which indicate that children should be exposed to environment that foster language development, which includes communicating with children, reading books for children, exposing children to TV, and exposing a child to other children. Literature reviewed in this study indicates that children can learn language when they are exposed to a language stimulating environment. Throughout the reviewed literature, the researcher learned that language is learned. Reviewed literature shows that children learn language from their parents and caregivers and that children absorb, listen and imitate the words that they hear in order for them to learn language (Brock & Rankin, 2008).

This theory helped the researcher to identify environment that may affect the development of language in children. It also assisted the researcher to establish the different features of the environment that can influence the development of language in children. Moreover, the theory

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helped the researcher to identify the type of reinforcements that parents use to stimulate language development in children, as well as the negative reinforcements which can delay the development of language in children that parents should avoid. The Learning Theory posits that children's language development is influenced by their environment but ignores the development of disorders that may hinder the development of language. To address this limitation, the researcher used the Social Cognitive Learning Theory.

2.2.3. Social Cognitive learning theory

Albert Bandura's Social Cognitive Learning Theory was developed in 1925. The Cognitive Processing Theory of language development emphasizes that learning a language is a process of data crunching in which the process of learning words and meanings relies on the computational ability of the human brain (Levine & Munsch, 2011). Hoff and Naigles (2002) argue that children learn a language through what they hear. Just like Skinner, social cognitive learning theorists believe that children process language before they can even start speaking. In contrast, to Chomsky's theory, Social Cognitive Learning theorists believe that language is not innate but that it is learnt (Levine & Munsch, 2011). However, unlike Skinner's learning theory which believes that children's language development is influenced only by the environment, the Social Cognitive learning theory believes that children are active participants who can influence their language learning process in several ways. Bandura believes that children choose what they want to learn by valuing the rewards that may follow that behavior (Levine & Munsch, 2011), this statement guided the research findings on the reinforcements that parents may use to facilitate the language development of children.

This theory was deemed appropriate for this current study, because the latter sees children as having power to determine their language development. Literature reviewed in this study shows that language is a valuable tool for communication. For example, when children realize that language is used to communicate their needs and wants, they will value language, and this will motivate them to learn it. Moreover, Skinner values conditional learning as the only form of learning. However, the Social Cognitive Learning theory states that, in addition to conditional learning, children also learn language through observational learning and self-regulation.

Pathology, according to this theory, takes place when children fail to self-regulate their language development even when exposed to a stimulating environment. However, optimal development

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takes place when a child learns through observation, conditioning and self-regulation. Children should be able to regulate their language despite the environment. This theory states that many things can be used to stimulate language development, for example, social interaction, conditional learning, imitation and self-regulation. This theory guided the research objective on the development of language disorders. The theory shows that language disorders can be treated by allowing the children to actively participate in their language development.

Social Cognitive Processing theorists believe that children's language development may be reinforced by social interactions, but the process of learning language is determined by the ability of the brain. Hoff and Naigles (2002) found that the number of words that children learn do not depend on the level of social engagement with their parents, but that it depends on how those children are exposed to language. Since, this theory states that language is not only influenced by the environment, but by the child's ability, this explains why some children, even when exposed to a stimulating environment, are still unable to develop language.

2.3 Conclusion

The combination of all three theories helped the researcher to learn how language is learned and the barriers to language development. Together, these theories helped the researcher to achieve the objectives of the study. Skinner's Learning Theory helped the researcher to explain the environmental factors that can stimulate language as well as the importance of caregivers in language development. The Universal Grammar Theory of Noam Chomsky highlights the different activities that can be used to fill in the words and to activate the inborn language acquisition device. Lastly, the Social Cognitive Learning Theory of Albert Bandura, helped the researcher understand the development of language disorders and how they can be treated. The next chapter reviewed the literature on language development.

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CHAPTER 3: LITERATURE REVIEW

3.1 Introduction

This chapter reviews literature on language development. The following subtopics were reviewed: language development in children; activities that can influence the development of language; factors that influence language development; and the disorders that are associated with language development. To review the literature, the following search engines and databases were used: Google Scholar, sciencedirect.com, Wiley.com, academic-edu, ebscohost, academic research complete, Sage Publications, Sabinet, SA-epublication, Journal articles and books. Most of the reviewed literature was published between 1990 and 2018. However, the researcher also made reference to old but seminal publications. As indicated in the problem statement, most language acquisition studies are old. When searching for literature the following key words were used: language development, language acquisition and language disorders.

3.2 Background of language development

language is a symbol of humanity; it is one of the aspects that distinguish humans from animals Berko-Gleason (1997). Language is used to express people's ideas, share feelings, beliefs and to understand other people's minds. Language is defined by Levey (2014) as an organized system of arbitrary signals and rule-governed structures used to communicate. Language occurs in different forms such as reading, listening, writing, and speaking. For a child to be able to express himself or herself using language, he/she must be able to use at least two of those forms. To become fully functional members of a school and society, children must learn the elements, rules, structure, and conventions of language.

The three aspects of communication are content, form, and use. Content refers to the ideas and meanings of words, while form refers to the way in which the meaning of words is represented in speech, sign language, and writing. Use refers to the function of language in a general context (Bloom & Lahey,1978). These three aspects of language interconnect with each other and a disruption to any of those aspects may raise problems with communication (Bloom & Lahey,1978). Words, as they are, do not give a child a clue of the object being labeled. For children to know the object, they should know the meaning of that word. When children learn the meaning of words, they also learn how one's language labels the objects in the world.

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Researchers such as Golinkoff and Hirsh-Pasek (1999) and Brown (1973), argued that language originates when the child is still in the mother's womb. They further argued that fetus can hear sounds and words from both inside and outside of the mother's abdomen. Those sounds introduce a child to the language that they will later learn. After birth, infants can differentiate sounds that are used in language. This argument concurs with Chomsky's belief that language is innate.

Other researchers such as Fenson, Dale, Reznick, Bates, Thal and Pethick (1994) indicated that the first word is produced after birth. However, that word may appear at 8 months without any sign of a language problem. At around 16 months, a child should be exposed to at least 50 words, and around 18 months of age the productive vocabulary usually increases to +/- 50 words. It is at 18 months that individual differences start to appear, and those are based on the words that children produce (Fenson *et al.,*1994). Some children will know more words compared to others, such differences depend on the environmental factors and activities that a child is exposed to. The above statement is supported by skinner, (in Swartz, 2007) who highlighted that a stimulating environment will have an influence on the development of language in children. This variation among children is normal and parents/caregivers should expect it, as indicated in the social cognitive theory of Albert Bandura, that the ability for a child to learn language depends on the brain of the child (Levine & Munsch, 2011).

As children grow, they continue to acquire more words and the meanings of those words. Their language development increases from the words of infancy to complex words of language such as action words. As they grow older, children also learn to make connections between the words they use and the meanings of those words. This helps children to build complex communication and parents should help through this process. It should be noted that although Noam Chomsky (1959) indicated that language is innate, and children are born with pre-programmed language device, this device should be filled with words of a particular culture. Parents may help through this process of language development by exposing children to stimulating environments and activities as indicated by Skinner that language is learned.

The process of learning language relies on the ability of human brain (Skinner in Levine & Munsch, 2011). The brain of children has an influence of the development of their language. The human brain is divided into two halves, the left and the right hemispheres. Verbal language is controlled by the left hemisphere and the right hemisphere controls body language (Sadock & Sadock,

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2007). The left hemisphere of the brain is made up of two areas which are central to language and these are Broca's area and Wernicke's area. The Broca's area is involved in the production of speech. It regulates the movement of the tongue and lips (Gleason, 2005). People who have damage to Broca's aphasia will have difficulty speaking (Swart, et al. 2011). Wernicke's area has to do with understanding and creating meaning in speech. The researcher concluded that damage in the brain hemisphere may results to language disorders.

Stages of language development/acquisition

This section discusses the stages of language acquisition. Language acquisition progresses through the stages. However, the length of time each child spends at a particular stage may vary greatly, depending on the brain of a child (Bandura in Levine & Munsch, 2011), the activities that the child is exposed to (Chomsky, 1959) and the environmental factors that the child is exposed to (Skinner in Swartz et al., 2011) . The stages are discussed next.

Prenatal development

This is the stage in which children hear voices before they are born (Levine & Munsch, 2011). Children are able to hear words and their mother's speech before they are born (Louw & Edwards, 1997; Mathews, 2011). This, according to Karmiloff and Karmiloff-Smith (2001), can be shown by the fetal heart rate change and the motor activity. Karmiloff and Karmiloff-Smith (2001) further argue that, after birth, children show interest in the voices of their mothers compared to those of other people. This means that children may be exposed to language before birth (Louw & Edwards, 1997). Parents may help in this stage by exposing their unborn children to language stimulating activities such as reading books aloud and listening to soothing music (Mathews, 2011). Prenatal exposure to language has an influence on the later development of language in children (Karmiloff & Karmiloff-Smith, 2001).

From birth to one month

This is the stage in which children used cry to communicate (Louw & Louw, 2007). At an early stage, crying is used to show discomfort, but, as time goes on, it is used to request for attention. Children use undifferentiated crying to communicate their needs to their caregivers (Shulman & Capone, 2010). Caregivers can distinguish cries of pain, hunger, discomfort, tiredness and

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boredom by listening to the pitch of the cry (Black & Mutulu,1999). Caregivers should respond gently and consistently to children's cries (Mathews, 2011). Children start to communicate through crying when they realize that parents attend to them when they cry (Levine & Munsch, 2011). If caregivers do not give children attention, they will cease trying to communicate their needs. This will delay the children's language development. Eye contact and playing with the child is very important. It encourages the child to imitate the caregiver. During this stage, singing and talking to the child during bath time and feeding are very important (American Speech-Language-Hearing Association, 2011; Mathews, 2011). Caregivers should show excitement at the responsiveness of the infants to encourage them to respond more frequently (Mathews, 2011).

From one month to four months

This is the stage when babies start to make pleasant sounds (Menn & Stoel-Gammon, 2005). At two months, the vocal tract is not sufficiently developed to enable children to talk. It takes three months for the required organs to be in place. In the first two months, babies make grunts, cries and noises linked to breathing or fussing. Caregivers should respond gently and with a smile to the child's cry (Mathews, 2011). Tamis-Lemonda and Rodriguez (2009) concur when they argue that the style of language used by caregivers when talking to the children is important in child language development. At three months, babies start to coo and laugh (Louw & Edwards, 1997).

When the child begins to make vocalizations and faces, such as grunts and frowning, caregivers should imitate these actions (American Speech-Language-Hearing Association, 2011), and when the child smiles, caregivers should smile back too and respond verbally (Mathews, 2011). By so doing, the caregiver will encourage the child to keep on trying to communicate using vocalization. At this stage caregivers may enhance child language development through singing songs, reading books and walking with the child while touching and naming objects (Mathews, 2011). Generally, from birth to the age of four months, children express their needs through crying and are soothed by the sound of voices or by low rhythmic sounds. When adults talk to children, children imitate adults' tongue movements, and start to make sounds, coos and gurgles (Nixon & Gould, 1996).

From five months to seven months

Between five and seven months, children begin to play with sounds and use them to express emotions (Louw & Edwards, 1997). This is the stage in which children learn to distinguish between

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the sound of their language and sounds which are not part of their language (Fromkin & Rodman, 1993). Caregivers should continue to play games and activities with the child, for example, imitating the child's sounds and facial expressions, naming body parts, mirror play, reading, singing and talking to the child. Caregivers should use the child's name while playing or talking to the child. This helps the child to recognize it easily (Mathews, 2011).

Eight to eleven months

At about eight months, children begin to use babbling. Babbling is similar across languages and involves sounds like baba and dee-dee-dee, ma-ma-ma and da-da-da (American Speech-Language- Hearing Association, 2011; Berk, 2010; Goodluck, 1991; Louw & Edwards, 1997). Babbling leads to children's first word (Levine & Munsch, 2011), and followed by words such as yes or no and wave hands to say bye-bye (Mathews, 2011). To enhance child language development, caregivers should talk about daily activities as they happen, for example, 'I am eating'. Caregivers should also start giving the children simple instructions such as 'show me your mouth' (Mathews, 2011). Those instructions help children to associate words with objects and people (Levine & Munsch, 2011).

One year old

Towards the end of their first year, children begin to experiment with different combinations of words. At this stage, children develop the muscles used to make sound. They start to learn to control the processes of sound production. Their vocal infrastructure starts to produce exact words (Louw & Edwards, 1997). At this stage, children start to use real words for objects; they can name more objects and familiar peoples. This is the stage at which children use one word to communicate, for example, 'water', to say they want water (Louw & Edwards, 1997; Louw & Louw, 2007; Mathews, 2011). To enhance language development, caregivers should allow children to point out and name familiar pictures in the book, caregivers should name the unfamiliar objects and encourage children to imitate them. While children imitate unfamiliar words caregivers should reward the child (Mathews, 2011). The child's vocabulary increases to about 50 words at the age of 16 months (Swartz *et al.*, 2011).

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Two years

This is the stage in which children can follow simple questions and instructions from caregivers. They can say a few things such as their names, names of different objects, and two-word sentences such as 'baby hunger' (Lao, 2015). They make music, sing and dance and they can listen to stories (Nixon & Aldwinkle, 1997). They start by using one-word sentences (holo-phrases) to convey the meaning of a whole sentence (Mathews, 2011; Van Vuren, 2012). The child's vocabulary increases to about 150 to 250 words (Swartz *et al.*, 2011).

Three years old

At three years, the child uses about 300 words and the vocabulary continues to increase everyday with the help of the caregiver (Levine & Munsch, 2011). Mostly, children understand more words than they can express. At this stage children should be using three to four-word sentences when talking (Mathews, 2011; Van Vuauren (2012). At first, children combine two of their early holophrastic words, each word with its meaning (Bloom, 1991; Fromkin & Rodman, 1993) but later they start to use full sentences (Louw & Louw, 2007).

3.3 The importance of language development in children

The most important function of language is to communicate. Language allows children to have a say in what they want, need or feel, it helps them to communicate ideas and to comment during a conversation (Finegan, 2008; Louw, Van Ede & Louw, 1998). Children use language for socialization. During socialization, children learn the norms and values of their cultures. Burman (1994) argues that language is the outcome of socialization. Children learn to adjust their speech to fit the social situation.

Language helps children to establish and maintain relationships, relationships and friendships start through communicating (Newcombe, 1996). Children play and make friends though communication, it helps them to adjust socially with other people and to understand the world and their surroundings, they use language to categorize and group things that surround them, such as animals (Louw, et al.,1998).

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Language is the foundation of every culture as stated by Schaefer (1995), without language, culture would be impossible (Hoff and Naigles, 2002). Children learn games, norms, values and the expectations of a particular culture through language; it helps them to fit into their cultures. This highlights the importance of language in culture. Children learn values and norms of society through language. Language is not just a symbol of communication, but it is also important for people's cultural heritage and identity (Swartz et al., 2007). Children learn language through interacting with their parents and caregivers (Bartolotta & Shulman, 2013).

3.4 Activities that influence the development/acquisition of language

Chomsky stated that although language is innate, the LAD should be filled with words of the particular language. Parents may use several activities to fill the LAD. There are several activities that can be used to foster the development of language. Children learn language from caregivers. The role of caregivers is of great importance to a child's speech and language development (Mathews, 2011). The caregivers' speech influences the lexical development of the child (Vosoughi, Roy, Frank and Roy, 2010) and the caregivers' engagement in the children's learning activities expands the children's vocabulary and conceptual knowledge (Tamis-Lemonda & Rodriguez, 2009). Caregivers should use a variety of activities to foster the child's learning development during normal social interaction (Hetherington & Parker, 1993). The children's language development is largely dependent on verbal interactions with their caregivers (Mathews, 2011; Tamis- Lemonda & Rodriguez, 2009). Active parenting strategies can help to promote young children's language development, cognitive development and educational achievement both in the early and later stages of development (Mayo Clinic, 2013). Parenting practices, such as reading of books, singing to a child, responsiveness, and warmth in interactions, are all associated with better developmental outcomes (Bradley, 2002). The following are the activities that parents, and caregivers may use to foster language development:

3.4.1 Verbal interaction

Language is learned though verbal interaction. Verbal interaction should start at prenatal development stage and continue through all stages of language development. Children learn language when parents communicate with them. To helps children, understand what the parents want to communicate, parents try to use a simplified language different from that which they use when talking to adults. This is called motherese (Bartolotta & Shulman, 2006) or 'baby talk' (Brock

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& Rankin, 2008). In addition to motherese parents also use animal sounds to refer to animals. Through this process of learning, children will start pointing to different things around them to request their parents or caregivers to supply the name of the object or person (Shulman & Capone, 2010). Older children are also important in the development of younger children. Children who grow up in families where there are other children learn language with ease. Children learn to imitate words and learn meaning of words from caregivers though verbal communication.

3.4.2 Responding to children's cry

Children from birth to one months old communicate through crying to attract the attention of their parents and caregivers (Bartolotta & Shulman, 2006). This is the way they communicate with their parents and caregivers to get what they want and to seek assistance (Shulman& Capone, 2010). They use different cries for different purposes and parents and caregivers learn to differentiate these cries. Parents and caregivers respond by meeting these needs and by talking to the babies (Brock & Rankin, 2008). Similarly, parents in rural areas cuddle their children when they cry and give them food as a way of responding to their cries. This shows that, from birth, children are introduced to the language of their parents. The researcher observed that, in rural areas, parents usually respond to children's cries by meeting their needs and talking to them. They reciprocate through making eye contact, by gestures, sounds and gurgling and, by so doing, the children soon begin to take part in conversations with their parents (Bartolotta & Shulman, 2013).

3.4.3 Responding to bubbling

Children begin with vowel sounds, move to babbling, gurgling and, later, they imitate the language (Bartolotta & Shulman, 2013). The first words are bilabial sounds such as 'mmmmm', 'mamama', 'papapapapa'. Babies enjoy producing different sounds. They usually make long continuous repetitions of the same or similar sounds as they babble and gurgle. Shulman and Capone (2010) added that babies do not get tired of experimenting and they work extremely hard at their language acquisition. It is of importance for parents to respond to children's babbling. Parents responds encourages babbling and enhance reproduction of sounds, words and, later, sentences (Bartolotta & Shulman, 2013).

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3.4.4 Playing with children

Children learn most effectively through experiences and practical activities which can be promoted through play. To enhance language, caregivers should join in this play, by both talking with and listening to the children. Children acquire language by interacting with caregivers in their immediate environment and also through responding to sounds and words, sentences and experiences expressed by their parents, family and others (Brock & Rankin, 2008). The rate of child language development depends on the interaction that they have with adults (Levine & Munsch, 2011).

3.4.5 Pointing on objects

Gesture and sign language involve the use of body parts to communicate. Around six months, children start to notice different things around them. This is seen through their pointing at those things. The researcher observes that the pointing method is the most used method in rural communities. Parents should give names to objects that the children point to (Gravetter & Forzano, 2003). Butterworth (2003) refers to pointing as a royal road to child language development. The above statement was also supported by Volterra, Caselli, Capirci and Pizzuto (2005) who also argued that children use pointing as sign language to communicate. He further states that children who use sign language before they speak continue to use it even when they talk. Sign language foster language development in children and it is important for caregivers to introduce sign language to children (Levine & Munsch, 2011). Goodwyn, Acredolo and Brown (2000) added that children who are introduced to sign language in the early months have an advantage of learning language early. To help children to learn language through sign language, parents should name the objects that children point, in that way the names of the objects will be saved in the children's vocabulary (Rowe & Goldin-Meadow, 2009).

3.4.6 Showing meanings

Showing meanings has to do with demonstrating the meaning behind simple words, sign and gestures, for example, waving goodbye at the door when one is saying bye-bye. It is also called using gestures to communicate with the child (American Speech-Language-Hearing Association, 2011; Mathews, 2011). This is very important in child language development. Using actions to

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convey the meaning of one's words to a child would help the child to see the relationship between one's words and one's actions (Mathews, 2011).

3.4.7 Narration words and stories

An environment which is language rich is very important to a child's language, speech and literacy development. An example of an environment which is language rich is one in which a caregiver talks about what she is doing. Telling the child what one is doing would help the child understand one's actions and the name and the description of that action. Narration helps the child to name familiar objects and events at the age of 2 (Mathews, 2011).

3.4.8 Reading books and print media

Reading with the child can be in the form of speaking the words on the page or talking about the pictures in the book with the child (American Speech-Language-Hearing Association, 2011; Mathews, 2011). Caregivers should use large colourful picture books to gain the child's attention (American Speech-Language-Hearing Association, 2011). Reading with the child and storytelling enhance child language development (Sorsby & Martlew, 1991) and positive attitudes towards literacy (Mathews, 2011; Tamis-Lemonda & Rodriguez, 2009). If the caregiver allows the child to take part in discussing the story in the book, it would help the child to have a conversation about reading. Listening to a story also helps the child to learn proper tone and expression for reading (Sady, Nabeih, Mostafa & Sadek, 2013). Reading books for a child and storytelling does not only enhance language development it also provides the child with the foundation for early learning (Tamis-Lemonda & Rodriguez, 2009). People in rural areas who do story telling are grandparents. However, nowadays, most households are made up of nuclear families, and there is no one to tell stories to children.

3.4.9 Asking questions and turn talk

Asking children questions helps children to learn to express themselves clearly. For example, if the child asks for a drink, the caregiver should ask whether the child wants water, tea or juice. By giving the child a choice, the caregiver reinforces the child's request by asking for a response (Seifert & Hoffnung, 1994). If the child responds by pointing, the caregiver should ask him/her again. This would help the child to respond verbally (American Speech-Language-Hearing

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Association, 2011; Mathews, 2011). Researchers found that children who are asked questions and respond to those questions verbally, tend to be advanced in language development (Tamis-Lemonda & Rodriguez, 2009). Turn talking is very important in communication. A dialogue with children, is a crucial foundation for later communication. Turn talking during baby feeding may encourage the child to eat (Mclaughlin, 2006) and also enhance child language development (Karmiloff and Karmiloff, 2001).

3.4.10 Rhymes and songs

Hoff and Naigles (2002) argue that newborn babies prefer music that they were exposed to at the prenatal stage than music they have never heard before. Repeating nursery rhymes or poems can also be used to enhance the child's language development. Nursery rhymes are predictable, and they capture the child's attention. Articulations of sound and rhyme recognition are skills that a child gains from singing rhymes (Mathews, 2011). Many rhymes and nursery songs include the counting of numbers and colours and, through this, children learn general preschool knowledge (American Speech-Language-Hearing Association, 2011; Mathews, 2011).

3.4.11 Reinforcement

When children's responses are reinforced and taken into consideration by parents and caregivers, children tend to make sense of what is happening around them. Slowly, they learn to reproduce sounds and words, and this will help them to understand how language works, and how different words are used together. This process happens automatically because children have an inbuilt language acquisition device (LAD) and a language acquisition support system (LASS) which helps them to learn a language (Chomsky, 1959). This shows that when parents respond to children's needs especially with words, children learn language.

Reinforcement may be in the form of smiling, responding, watching, listening and participating. Parents may scaffold their children's language by interpreting what they might say or need (Shulman & Capone, 2010). Brock and Rankin (2008), added that parents and caregivers support baby's sounds and words by prompting and repeating those sounds and words. The researcher also observed that parents and caregivers also enhance babies' language by providing words and extending the babies' contributions to full sentences.

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3.5 Factors that influence child language development/acquisition

The following section discusses factors that are used to influence child language development. Language development can be influenced by factors such as the home environment (Ansell & Van Blerk, 2005), gender of a child (Prewitt-Freilino, Caswell & Laakso, 2011), age of a child (Schweigert, 1994), family socioeconomic status (Feinstein, 2003) and cognitive ability (McClelland, Kessenich & Mo"ison, 2003). It is important to expose children to the environment that would help to influence language acquisition. Social learning theory emphases that language is learned, and language development is influenced by environmental factors. The following are factors that enhance language development:

3.5.1 Home environment

Home environment is the first environment that children have contact with from birth. Because of this, the home environment has a huge influence on the development of children (Ansell & Van Blerk, 2005). Children spend most of their time at their homes. As a result, they start to learn language at home. Children who are born in environments which are sensitive and cognitively stimulating have the advantage of learning language early (Tamis-Lemonda & Rodriguez, 2009). However, children who are born in less stimulating environments, develop vocabulary at a slower rate than their peer from stimulating environment and are at risk of early academic language development difficulties (Tamis-Lemonda & Rodriguez, 2009). A study conducted by Ramscar and Yarlett (2007) on linguistic self-control in the absence of feedback revealed that children raised in highly verbal families had higher language scores than those children raised in low verbal families. In addition to highly verbal environment parenting styles also have an impact on language development.

Children of parents who make time to communicate with them, as well as play and talk to them, learn language faster compared to those who are not given such opportunities. For a home environment to have an impact on the development of children parents should be involved in the lives of their children, the children's toys should be carefully chosen and also the type of purnishment that parents use to discipline their children should be carefully selected. Parents can foster language development by interacting with a child, reading books and communicating with a child (Flores, 2004; Leventhal, Selner-O'hagan, Brooks-Gunn, Bingenheimer, & Earls, 2004).

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The speech used by adults when communicating with children provides children with correct usage of language. A study on the milieu of the black preschooler and his subsequent performance in school by Masitsa (1988) found that, in South Africa, children have little talk with their parents, and parents do not really communicate with their children. This poor communication does not only fail to foster language development, it also impacts negatively on the children's later usage of language and personality development. Children who are exposed to vocabulary and complex grammatical structures develop language quickly compared to those who are not exposed to vocabulary and grammatical structure. When parents communicate with their children, it encourages them to continue communicating. This may help a child to develop language sooner than children raised in environments where communication is not fostered. Usually, children produce vocalization in different circumstances such as when they are either being changed and fed or when nonverbal behaviour, such as touching or smiling, is directed at them (Robert, 2012). In addition to communicating with children parents should also read book to children.

Although reading a book is an important tool to foster language development, the researcher has observed that parents in rural areas do not believe in reading books for children. Children from home environments where parents read books for them develop language faster compared to those from families that do not read books. Furthermore, Lonigan (in Louw, et al., 1988) argued that there is a link between reading books for younger children and their development of language and reading achievement later at preschool. Children from illiterate families and families with no picture books develop language slower than those from literate families.

The availability of stimulating materials at home, such as books and playing materials, is important in the development of infants' language (Evans, 2006; Rodrigues, Saraiva & Gabbard, 2005). Berument, Sönmez and Eyüpog˘lu (2011) conducted a study on supporting language and cognitive development of infants and young children living in children's homes in Turkeycch. In their study, they found that the language development of children living in these institutions is lower compared to those living at their homes. Rutter (2000) argued that the physical, language and cognitive development of children living in children's homes is negatively affected. Maclean (2003) argues that children living in children's homes do not find time to show their needs to their caregivers and are less likely to smile or make eye contact with the caregivers. Delayed language development in these children indicates that the environment in which a child grows has an influence on these children's development. Berument, et al. (2011) findings reveal that, beside

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the limited time that caregivers spend with the children, the shortage of toys and play materials in children's homes has a negative impact of the children's development.

3.5.2 Socioeconomic status (SES)

Previous research studies indicate that there is a relationship between socioeconomic status (SES) and cognitive development (Feinstein, 2003; Tulking & Kagan, 1972). Language development of children from lower SES is poor compared to that of those from higher SES (Louw, et al., 1998). This observation is supported by the findings of a study done by Southwood in 2010 which also revealed that the SES has an influence on children's language development. These differences are demonstrated by the difference in vocabulary of children from both SESs and not by the grammatical development (Bee, 1988). Parents from higher SES spend more time talking to their children compared to those from lower SES (Tulking & Kagan, 1972) and use sign language to communicate with their children compared to those from lower SES backgrounds (Rowe & Goldin-Meadow, 2009). This gives children from high SES an advantage to learn language early compared to those from lower SES families. Children from low SES have less advanced language skills than their middle-class peers. Hess, Holloway, Price and Dickson (1982) argue that higher SES parents use more developmentally enhancing activities to sharpen the language development of their children.

3.5.3 Early childhood education (ECE)

Introducing children to ECE increases children's vocabulary. ECE can be done either at home or at preschools. McClelland, et al. (2003) argue that the number of children attending early childhood schools is increasing. Children who attend early childhood schools spend most of their daytime at early childhood schools and because of this, early childhood schools have become a second environment that fosters language development in children. Children who attended early childhood schools (with stimulating materials) had higher scores in language compared to those who do not attend crèche (O'Brien, Caughy, DiPietro & Strobini, 1994). O'Brien, et al. (1994) argue that children from low SES who attend early childhood schools learn language better than those who are not attending crèche. This is because they are exposed more to cognitive stimulation and learning opportunities than children raised at home. The quality of early childhood schools influence children's language development. The quality of early childhood schools is measured by teachers' training, group size, resources and environment. In additional to

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environmental factors a child's individual characteristics also have an influence on that child's language development (McClelland et al, 2003).

3.5.4 Cognitive ability

Children who score high in intelligent quotient (IQ) tests begin to communicate early compared to those who score lower (Louw, et al., (1998). Researchers, such as Turner and Helms (1995), disagree with the issue of the IQ's impact on the development of language because IQ tests are only assessed when the child can talk.

3.5.5 The role of gender in language development

Researchers, such as Prewitt-Freilino, et al., (2011) Harris (1977) and Silverman (1978), found that gender has an impact on the child's development of language. It is argued that language development in girls is faster than in boys. This difference in language development between boys and girls is caused by a number of reasons. Firstly, the left hemisphere of the brain in girls develops faster than that of boys (Louw, et al., 1988). Secondly, mothers spend a lot of time with girls compared to the time they spend with boys, and lastly, the type of toys that children are exposed to. Girls play with dolls which allow a lot of communication, whereas boys play with toy cars which do not require communication (Moss in Louw, et al. 1988). In support of the above statement, Harris (1977) argues that females in the early years of development show more speech production than males. He further adds that boys between two and six years show lower performance in language development compared to girls of the same age.

In contrast, researchers, such as Levine and Munsch (1992), disagree with the belief that gender differences have an impact on language development. They argue that language develops at the same rate between boys and girls and that the only difference is in how they use language and eye contact. The way in which boys and girls use language also differs. Usually, boys use more commands than girls. At the same time, girls maintain more eye contact than boys during communication. The study conducted by Masitsa (1988), in South Africa, the milieu of the black preschooler and his subsequent performance in school, does not show any gender differences in the development of language.

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3.5.6 Age and language development

Language development and processing begins before the child is born (DeCasper, Lecanuet, Bunsel, Granier-Deferre & Maugeais, 1994). From birth, children start to make sounds and at two months they start to make cooing sounds. At four months, cooing is changed into babbling. Brown (1973) argues that children, at one year, understand more words than those that they can say.

Within 12–18 months, language is expressed in one-word speech (Cohen, Manion & Morrison, 2011). From 24-36 months, children start using words correctly (Simms, 2007). Language development increases as the children grow up. The words that children understand and use gradually increase and improve as the children grow older. This shows that age has an impact on the development and acquisition of language in children (Schweigert, 1994). It should be noted that although children may be exposed to language stimulating environment, language development may be disrupted by language disorders (LD).

3.6 Disorders that are associated with language development

The process of language development can be disrupted by various disorders, including apraxia of speech and articulation disorder (Zieve, 2014). Although most children learn language easily, it is not always the case with all children. Some children learn language with difficulty (Zieve, 2014). Language disorders in children refer to problems related to either getting the meaning of words (expressive language disorder), or understanding the message coming from others (receptive language disorder). Some children with delayed language development are, at later stage, also diagnosed with other disorders such as Attention deficit-hyperactivity disorder (ADHD). Most of these disorders are caused by injury in the brain or volume of the cortex (Sadock & Sadock, 2007). Tamis-LeMonda, et al. (2001) argue that early diagnosis of LD leads to early initiation of therapeutic intervention and this can be an advantage to the children's recovery.

3.6.1 Types of language disorders in children

3.6.1.1 Delayed language

Children with a delayed language disorder learn words and grammar much more slowly than those without this disorder. This disorder is mostly caused by hearing loss. A child who cannot

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hear well or at all, in most cases, will have trouble learning and understanding spoken language. Speech delays are also caused by oral-motor problems (Bright Minds Institute, 2012). Oral-motor problems refer to difficulties in using the lips, tongue, and jaw to make speech sounds. Sometimes these problems start in the areas of the brain that are responsible for speech and language development (Rowe, 2008).

3.6.1.2 Childhood apraxia of speech (CAS) Disorder

Childhood apraxia of speech (CAS) are motor speech disorder. Children with this disorder have problems when they make sounds and say words. Apraxia happens when the brain of a child has problems with planning how to move his/her mouth parts (e.g., lips, jaw, tongue) which are needed to produce sound and words (American Speech-Language Hearing Association, 2014). Children who suffer from apraxia know what they want to say, but their brain has difficulty with moving the muscles that are necessary to say the words that they want to produce (Sharp & Hillenbrand, 2008). Childhood apraxia disorder of speech may cause language problems, such as delayed language development, expressive language problems, word order confusions and word recall. At school, those children may have problems with learning to read, spell, and write words (American Speech-Language Hearing Association, 2014). Apraxia is caused by Genetic or syndrome disorders and strokes or brain injury (American Speech- Language Hearing Association, 2014). Aphasia affects children's language acquisition and development; it also affects how they talk and the way they understand what others are saying (Trocme & Caunce, 1995).

3.6.1.3 Articulation disorder

Articulation disorder is the disorder in which children are unable to make sounds of words. For people to produce sounds and words, parts of the mouth, such as the lips, teeth, tongue, jaw, and palate (roof of the mouth), need to move together to make shapes. These parts of the mouth regulate the movement of the air that comes from the vocal cords. Children with articulation disorder make incorrect words sounds, they are unable to move together the parts responsible for sounds (The Children's Hospital at Westmead, 2013). This makes it difficult for a listener to understand what those children are trying to say (Wegerif, Russell & Grundiling, 2005).

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The three types of articulation disorders are omissions, substitutions, and distortions. Omission is when a child misses some alphabets in a word when talking, for example, saying "'oo" for "shoe." Substitution means putting alphabets where they do not belong, for example, the use of "w" for "r" and saying "rarry" for "worry". In distortion, most parts of the word are there, but they are a little wrong. This is when a child says a word that sounds like what it should, but it is not quite right, for example, "shlip" for "ship" (Sharp & Hillenbrand, 2008). Articulation disorder makes it difficult for children to communicate. Articulation is caused by physical handicaps such as cerebral palsy, cleft palate, or dental problems and hearing loss (Kennison, 2013).

3.6.1.4 Stuttering/stammering

Stuttering is when children's speech does not flow smoothly. It may either be interrupted by repeating sounds or words (for example, wa-water), stopping in the middle of a word (no sound comes out at all), and holding a sound or word for a long time (for example, wwwwwwater). When children stutter, they usually blink their eyes quickly, their lips might shake, or they might move in a way that shows that they are struggling to produce a word (Simms, 2007). It is normal for children to stutter a little when they learn to talk, and it is most common in children between the ages of 2 and 6 years. Spluttering may affect a child's language development and speech skills. Because of gender difference, boys are three times more likely to stutter than girls. Stuttering may differ with each situation. Some children may stutter more in certain situations. Usually children stutter when they must speak in front of many people or over the telephone. Some children who stutter may not stutter when they talk to themselves or when they are singing (Bartolotta & Shulman, 2008).

Stuttering is divided into four categories, namely developmental, psychogenic, neurogenic and hereditary. Developmental stuttering happens when a child fails to find the words that he/she wants to use. Developmental stuttering is normal in children and goes away as the child grows up. Neurogenic stuttering happens when the child has problems in the brain, nerves, or muscles (Brown, 1973). Psychogenic stuttering is caused by a severe damage or stress to the mind. This type of stuttering usually happens in children with mental illness. This type of stuttering is not common in children. Hereditary stuttering is the stuttering that runs in the family and may be passed to children from their parents (Simms & Schum, 2011).

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3.6.1.5 Voice disorders

A voice disorder happens when the vocal cords are damaged. The vocal cords are the muscles in the throat that are responsible for making sounds and words. Simms and Schum (2011) indicate that children can damage their vocal cords by shouting, screaming, and talking with extremely loud voices. Their voices may become harsh and they may find it very difficult to produce sounds and words. The throats of children with voice disorders may hurt a great deal when they try to speak, and this pain stops them from communicating (Bloom & Lahey, 1978). Voice disorders in children can be treated with speech therapy (Simms, 2007). Speech therapy may train children to speak softly. They are also taught not to scream, shout, or do anything that may hurt their vocal cords (Fernald & Morikawa, 1993).

3.7 Vygotsky social development learning theory

The learning theory was developed by Lev Vygotsky between 1920. His theory emphasis on the importance and contribution of environment, culture and social interaction on the learning process. The theory argued that language development is important in children's cognitive and language is valued for psychological, social, educational and emotional purpose. This theory portrait that language is learned through interaction with others and integrated into the individual's mental structure. One major aspect of the theory of Vygotsky on language development is the zone of proximal development (ZPD). ZPD is a level of development that can be accomplished when a child participates in social interaction. This is the area of exploration for which a child is cognitively prepared to learn language but require assistance and social interaction to fully develop.

3.8 Conclusion

The literature review shows that language development is an important process in the development of children. Language helps children to communicate their needs and express themselves. The literature further shows that language is learnt, and that parents and caregivers are the most important tools for the development and acquisition of language in children. It is important for parents to actively engage children in activities that would influence the development of language, for example, turn talking, songs and pointing at objects. It is also important for parents to respond to children's cries as this influences the development of language. Although

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parents are important in the process of language development, other factors, such as home environment, age, gender and socio-economic factors, also influence language development. During the process of language development, some children experience language disorders that may delay the process of language development. The next chapter detailed the research methodology used by the researcher to address the objectives of the study.

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CHAPTER 4: RESEARCH METHODOLOGY

4.1 Introduction

This chapter presents the research methodology that the researcher used to conduct the study. Research methodology is defined as various procedures used by researchers to gather data (Welman, Kruger & Mitchell, 2001). Research methodology helped the researcher to explore language development in children. The research methodology chapter elaborates on the logic of research methods and techniques used in the study. It discusses the following: research approach, research design, location of the study, population of the study, sampling method, participants, research instrument, pre-testing, data collection, data analysis, and ethical considerations.

4.2 Research paradigm

The study followed the social constructivism paradigm as recommended by Lincoln and Guba (2000). Social constructivism holds the idea that knowledge or reality is socially constructed, and people reshape their mental models of reality through social collaboration, building new understanding as they engaged in learning experiences. It aims on understanding the meaning of phenomenon from participants point of view (Creswell & Clark, 2011). The study holds the idea that language like knowledge, is constructed by people. The activities that enhance language development are share by a community through social interaction. Children learn language through social interaction, and the process of language development requires guidance and support from caregivers. The researcher gathered rich information from participants, thought the use of face to face in-depth interview to develop a conceptualized model that may be used to facilitate language development in children.

4.3 Research approach

The study was qualitative in nature. Robson (2011) argues that a qualitative study focuses on people's experiences, social issues and situation. Holloway and Wheeler (2002) define a qualitative study as a form of social enquiry that focuses on the way people interpret their experiences and the meaning attached to their everyday lives. In this study, the researcher used the qualitative approach to develop a model to facilitate children acquisition and development of

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language. The use of qualitative methods helped the researcher to explore different methods used by parents and caregivers to sharpen the language development of the children. The information from mothers, caregivers, speech therapists and psychologists helped the researcher to develop a conceptualized model to foster language acquisition in infants. Qualitative research also allowed for in-depth description of data collected. The use of the qualitative approach helped the researcher to explore the language development methods that are used by mothers in Makhado Municipality to enhance the acquisition and development of their children's language. The qualitative approach was also used by Popich (2003), in a study which sought to develop a tool to stimulate communication in infants between 0 – 12 months. Another qualitative study was done in 1997 by Thal, Bates, Goodman and Jahn-Samilo to explore language abilities of late-and early talking toddlers.

4.4 Research design

Research design is a plan that describes when, where and how the research data were collected and the method of analysis to be employed (Creswell & Clark, 2011). Burns and Grove (2003) define a research design as a blueprint for collecting a study with maximum control on the factors that may affect the validity of the findings. This study was exploratory in nature.

Exploratory research is defined by Burns and Bush (2006) as a way of collecting data in an informal and unstructured way. There are four different ways to implement exploratory research, namely focus group research, secondary research, interview of experts and open-ended questions (Hagaman, 2018 and Fluids Survey Team, 2014). A focus group exploratory research design refers to the used of a group with 6 to 12 people who are asked specific questions on a specific phenomenon. A secondary exploratory research is research which is conducted on a phenomenon that has been researched on previously with the aim of improving the previous study. Experts exploratory research design is an exploratory design that aims on collecting data from people who specialize in a certain field, and, lastly, open-ended exploratory designs are exploratory designs that allow participants to explain a specific phenomenon, giving the researcher an opportunity to gain more information (Hagaman, 2018). The current study used experts and open-ended explorative research design. The researcher interviewed language experts and parents using open-ended questions to investigate the development of language in children. Interviewing language experts and mothers allowed the researcher to examine the phenomenon from different angles. The use of open-ended questions allowed the researcher an

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opportunity to gain more information. The researcher started by defining the objectives, then reviewed related literature, consulted the experts for data collecting and lastly analyzed the collected data.

The exploratory research design helped the researcher to investigate the nature of acquisition and development of language and other factors that are related to it. It also allowed for an in-depth study of children's language development and this serves as a foundation for a conceptualized model to foster language development (Babbie & Mouton, 2012). It helped the researcher to gain new insights and discover innovative ideas on the methods that are used by parents and caregivers to enhance the language development of their children (Creswell & Clark, 2011). It also gave the researcher an opportunity to conduct in-depth interviews with the participants. Exploratory design helped the researcher to gain background information about the activities that are used to foster language development (Sharp & Hillenbrand, 2008). The exploratory design was also used by Popich (2003) to develop a tool for communication stimulation of infants aged 0-12 months. Thai, et al. (1997) also conducted an exploratory study on continuity of language abilities of late-and early-talking toddlers.

4.5 Location of the study



Figure 4.1: Map of Vhembe District (The local government handbook, 2012-2015)

The study was conducted in Vhembe District, which is found in Limpopo Province, South Africa. Vhembe District Municipality is in the northern part of the Limpopo Province and comprises four local municipalities, namely Musina, Collins Chabana, Thulamela and Makhado. The main languages spoken in Vhembe District are Tshivenda and Xitsonga (Limpopo Vhembe District Profile, 2011). The area is largely rural although there are urban settlements. Most houses are

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headed by females and there is a high rate of unemployment and extensive poverty (Department of Health and Social development, 2015). Health services are delivered by hospital, community health care, clinics and traditional healers. There is a high prevalence of diseases such as AIDS, HIV, TB, cardiovascular diseases among adults, malnutrition, and language disorder among children under five years old (Department of Health and Social Development, 2015). Most old people are illiterate, and a large number of youths are secondary school graduates; some drop out of school between the ages of 17 and 18 (Department of Health and Social Development, 2015).

Three villages, namely Tshikuwi, Tshirolwe and Ha-Matsa from Makhado Municipality, were selected for the study. Makhado Municipality is situated at the foot of the forested Soutpansberg Mountain Range, near the Zimbabwean and Botswana borders. Makhado Municipality is situated 100km from Polokwane on the N1-national Route going north (Makhado Municipality, 2013). In these three villages, there is a high rate of unemployment (Bessong, Odiyo, Musekene & Tessema, 2009), and a large number of the population is of school going age. Some of those who are employed work in nearby farms. Very few people have professional work (Ziervogel, 2006).

Those who are working in the farms go home at month ends, usually leaving their children on their own for long periods of time. Some of those that are not working engage in overnight gambling and alcohol abuse. Some professional workers hire caregivers to take care of their children during the day, but others take their children to crèches. Those who are working in farms leave their children in the care of grandparents or siblings. Most children look after each other; the older ones take care of the younger ones. The education levels in these villages are very low. Most women have grade 9 and very few have grade 12. Most girls drop out of secondary school to get married. Children usually roam alone around the streets during the day. Although there is a crèche, very few children attend it.

4.6 Population of the study

Population is the complete set of individuals having some common characteristics (Polit & Hungler, 1999). According to Welman, et al,. (2005), population comprises of individuals, groups, organizations, human products and events or the conditions to which they are exposed. Population describes all the elements that meet the criteria for inclusion in the study (Burns &

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Grove, 2003). Population of this study was mothers, caregivers, day care teachers, psychologists and speech therapists.

4.7 Sampling and sampling size

4.7.1 Sampling of the location

Three villages in Makhado Municipality at Vhembe District were homogeneously purposively selected for the study. A homogeneous purposive sampling is defined as purposive sampling that focuses on shared similar characteristics and traits (Etikan, Musa & Alkassim, 2016). The people in the selected villages share a similar culture. Convenience sampling method was used to select the three villages used in the study.

4.7.2 Sampling of participants

Three categories of participants were used, namely parents/caregivers, day care center and language experts (speech therapists and psychologists). Parents and day care center were selected from three villages, namely Tshikuwi, Tshirolwe and Ha-Matsa. Language expects were selected from Vhembe District. There was a large number of women who were raising children at Tshikuwi, Ha-Matsa and Tshirolwe villages. It was therefore impossible for the researcher to interview the whole population of mothers in these villages. Because of this, the researcher sampled a few people to participate in the study (Bless & Higson-Smith, 2000).

Non-probability sampling was used to select participants. This means that, based on researcher's knowledge of the phenomenon, the researcher judgment was used to select participants to be included in the study (Vogt, Garden & Haeffele, 2012). Purposive sampling, a sub-type of non-probability sampling, was used to sample participants for the study. The use of purposive sampling allowed the researcher to deliberately choose who to include in the study based on their ability to provide necessary data (Maree, 2007). The researcher handpicked the elements to be included in the sample based on the aim of the study (Strydom, 2005). Individuals selected were judged to have certain special characteristics or the ability to provide the most useful information for the study (Maree, 2007). For parents, the characteristics that the researcher used were that, they had to be women who had raised at least two children. This enhanced the quality of the study. There was no assurance that all women had a chance of being sampled for the study

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(Terre-Blanche, Durrheim & Painter, 2006). Only those with the characteristics that the researcher was interested in were sampled for the study.

Two types of purposive sampling were used to select the participants, namely maximum variation/ heterogenous sampling and expert sampling. The heterogenous sampling allows the researcher to select participants from different categories (parents, caregivers and day care teachers) whereas the language experts were selected using expert sampling (Etikan, et al,. 2016).

4.7.3 Sample size

Thirty (30) participants were selected for the study. Thirty participants were constituted of fifteen (15) women (12 mothers and 3 caregiver), ten (10) languages experts (5 psychologists and 5 speech therapists) and five (5) teachers in day care centers. Fifteen mothers selected for the study came from different age groups. The reason for selecting women from those diverse groups was to get an understanding of language acquisition and methods of enhancing language development from different generations. Ideas from different generations helped the researcher to develop a model that would work for different generations.

4.7.4 Inclusion criteria

Mothers and caregivers

The criteria for inclusion in this category was as follows: women from early adulthood to late adulthood, that is, women between the ages of 20 and 65, who have raised at least two children. Only Tshivenda-speaking women, who have raised at least two children were sampled for the study.

Teachers at day care centers

The criteria for this category of participants was teachers who have experience of teaching children below 3 years at day care centers. Five people from different day care centers in the three villages were selected to participate in the study. The reason for including this category is because these are the people who spend most of time with children from 0 to 3 years. The knowledge and skills they have are important in the development of a model.

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Psychologists and speech therapists

Five psychologists and 5 speech therapists from Vhembe district were selected to participate in the study. These professionals work with children who have language disorders and have a knowledge of language development in children. Their knowledge of language development enabled the researcher to develop a conceptualized model.

4.7.5. Exclusion criteria

All mothers and caregivers who were not Tshivenda speaking and those who had raised only one child were not included. Those who work at day care centers but who do not teach children were also not included in the study. Language experts who do not reside in Vhembe district were not included in the study.

4.8 Entry negotiation

The researcher observed proper protocol procedures. The researcher went to the headmen of all those three villages to seek permission to conduct the study and secure permission from participants. After securing their agreement to participate in the study, the researcher planned the schedule with them, as well as the venue for the interviews. The researcher requested them to give her their contact numbers, so that she would remind them of the interview dates as advised by Monnette, Sullivan and De Jong (1990).

4.9 Research instrument

Research instrument is a tool or device that the researcher uses to collect data (O'Leary, 2004). The researcher used an interview guide (see appendix 9), which is a set of pre-determined questions. The researcher developed an interview guide in English, and it was translated to Tshivenda by a language expect. It was then translated back from Tshivenda into English to ensure that the same meaning in the questions were retained as recommended by Rubbin and Babbie (1993). The interview guide comprised the questions to be covered in the interview (Breakwell, Hammond, Fife-schaw & Smith, 2006). This list of questions helped the researcher to remember the important issues to be covered during the interviews as highlighted by Schweigert (1994). The interview guide contained questions that sought to describe caregivers' activities that

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influence language development, identify environmental factors that influence language development, describe the importance of language development, and explain the disorders that are associated with language development.

The research instrument consisted of two sections. Section 1 comprised of socio-demographic variables such as age, gender, number of children raised and level of education. Section 2 had four major questions which sought to explore the importance of language development in children and factors within the home that influence language development, as well as to describe activities that influence language development and the disorders that are associated with language development.

The interview guide enabled the researcher to cover all the major questions during data collection (Greeff, 2005). The questions were open-ended. Mitchell and Jolley (1992) define open-ended questions as questions that do not provide fixed response alternatives. Open-ended questions helped the researcher to gain in-depth information about language development. Using open-ended questions enabled the researcher to give the participants freedom to provide answers in whatever way they chose (Morgan, 2014). Open-ended questions enabled participants to discuss the issues more freely than they would have if the questions had been close ended (Vadum & Rankin, 1998). Open-ended questions allowed participants to respond to questions in their own words (Babbie, 1990; Breakwell, et al,. 2006; Pelham & Blanton, 2007).

4.10 Pre-testing

Before the researcher collected data for this study, she conducted pre-testing. Pre-testing is a data collection activity done to test the instrument prior to the actual study (O' Leary, 2004). Participants of pre-testing had relevant characteristics like those of people who were subsequently used in the actual study. For pre-testing, three women from three different age groups were selected using purposive sampling. Pre-testing was conducted at the participants' homes. Before the pre-test interviews, the researcher planned the dates and time for the interviews with the participants regarding (Babbie & Mouton, 2012). Pre-testing was done using the interview guide intended for the actual study. It helped the researcher to estimate the time that the participants might take to respond to the research questions (Strydom, 2005). Pre-testing gave the researcher an opportunity to note participants' non-verbal behaviour that may possibly signify discomfort or embarrassment because of the content or wording of the questions (Welman

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et al., 2005; Pelham & Blanton, 2007). The three participants who were used for pre-testing were not included in the final study.

4.11 Data collection

Data collection indicates how data were obtained (Goddard & Melville, 2014). Arrangements were made with participants before data collection. Participants were informed about the dates and time for data collection. Data collection was done on days and times that suited the participants and data were collected from participants' homes and workplaces, depending on the decision of participant. Focus was on ensuring that participants were comfortable. Although the duration for individual interviews depended on the participants' responses, participants were informed about the estimated time of approximately two to three hours for completing the interview. The estimated time was based on the outcomes of the pre-test (Breakwell, et al,. 2006).

Data were collected using face to face semi-structured interviews. Semi-structured interviews gave the researcher an opportunity to learn about participants' ideas, beliefs, views and opinions on the acquisition and development of infant language (Maree, 2007). Face to face interviews gave the researcher an opportunity to probe and reflect on the responses (Brynard & Hanekom, 2006). They allowed the researcher to gain an insight into the participants' knowledge and allowed the respondents to speak freely (Mashamba, 2009). Using face to face interviews enabled the researcher to include all participants ranging from literate to illiterate (Babbie & Mouton, 2012). The interviews also enabled the researcher to observe the non-verbal communication of the participants (Brynard & Hanekom, 2006). Facial expressions helped the researcher to establish whether the participants understood the questions or not and also if the participants were comfortable responding to particular questions. The researcher asked participants the same questions, but she probed for more information depending on the participants' responses as recommended by Goddard and Melville (2014). All questions were asked to each participant. The researcher asked participants questions orally and recorded their responses using a voice recorder, with the permission to used voice recorder from the participants (Anderson, 2007). A tape recorder was used to capture participants' responses since writing the responses might have lengthened the duration of the interviews. Notes for both verbal and non-verbal responses were also taken. The notes helped the researcher during the interviews in terms of questioning, probing and reflecting on the responses, and they also assisted during data analysis (Fouche & De Vos,

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2005). All questions were asked using the language that participants understood best. The transcription of data was done by the researcher.

4.12 Trustworthiness of the study

According to Krefting (1991), research is trustworthy when it shows the reality of the data and the ideas of the participants. In the present study, the researcher bracket herself to ensure trustworthiness of the study. This helped the researcher to describe the participants' ideas and experiences. The study was trustworthy in terms of credibility and dependability.

4.12.1 Credibility of the study

Credibility is the confidence that can be placed in the truth of the research findings (Mouton, 1996). The findings of this study reflect the perceptions, ideas and beliefs of the people under study. The researcher made sure that the findings of the present study represented the information collected, and the participants' views (Granehelm & Lundman, 2004). The researcher immersed herself in the participants' world (Bitsch, 2005) and this enabled her to gain an insight into the context of the study. The researcher also used peer debriefing during the study. The researcher also sought the support and guidance of other professionals such as her promoters. The promoters evaluated the researcher's work and feedback and helped the researcher to improve the quality of the research findings (Pitney & Parker, 2009). This strengthened the integrity of the findings (Phillimore & Goodson, 2004). The researcher also did member check which involved the researcher giving the participants feedback after data analysis. The reason for this feedback was to enable participants to evaluate the findings and suggest changes if they were not happy with the findings as advised by Schwandt, Lincoln and Guba (2007).

4.12.2 Dependability of the study

Dependability is the stability of the research findings over a period of time (Cohen, et al,. 2011). The researcher requested the study participants to evaluate the findings and interpretations of the study to make sure that they were a true reflection of their experiences (Tobin & Begley, 2004). The researcher also kept the collected data and analysis of the study for audit trials as recommended by Browen (2009).

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The transcribed interview data were coded twice on different days. The researcher waited for two weeks before coding the data for the second time. Thereafter, the researcher compared the two-coding processes to determine if the first and the second codes were the same. The codes were the same and data analysis were deemed dependable. This also gave the researcher a deep understanding of the data and also improved its presentation (Li, 2004). The researcher also did peer examination, which involved the researcher presenting the findings of the study to other doctoral students.

4.13 Data analysis

Collected data were analyzed using Thematic Content Analysis. Thematic Content Analysis is used with any form of message, including speeches and interviews (Longhofer, Floersch & Hoy, 2013). This method is used to categorize a wide range of open-ended responses (Mitchel & Jolley, 1992). Thematic content analysis is a research method for the subjective interpretation of data collected through the systematic classification of coding and identification of themes (Goodwin, 2005).

The researcher used six stages of thematic content analysis developed by Braun and Clarke to analyze collected data (Maguire & Delahunt, 2017). The six stages are discussed next:

Step 1: Becoming familiar with the data

According to Patton (2002), content analysis is used to analyze several diverse types of data. Data were transcribed into written texts before analysis started. In the present study, all collected data were transcribed from audio recordings and observation notes (Schilling, 2006). The researcher read the transcribed texts several times to acquire the overall understanding of it (Kruger, 1998). This is the stage in which the researcher familiarizes herself with the collected data. The researcher read and reread the data to understand the meaning of data (Braun & Clarke, 2006).

Step 2: Generating the initial codes

The researcher went through the text again, but this time the researcher underlined and highlighted words, phrases or sentences which were relevant to the research questions (Breakwell, et al., 2006).

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Step 3: Searching for themes

This is the stage where units of the same meaning are clustered. In this stage, the researcher grouped different units of the same meaning into themes and sub-themes. The researcher cut out units of same meaning and put them together in a pile (Bernard, 2010).

Stage 4: Reviewing of themes

The researcher went through data and clusters for the second time, checking if data and the clusters were relevant to the themes. The researcher also checked if the clusters were distinct from each other and supported the aim of the study (Maguire & Delahunt, 2017)

Step 5: Defining the themes

This stage involves naming the units that are grouped together (Bernard, 2010). The researcher then gave appropriate titles to the themes according to the contents of each theme (Anderson, 2007). Before the researcher discussed the theme, she waited for two weeks and repeated step one to step five to ensure dependability of the findings (Li, 2004). Thereafter, the researcher compared the first code and the second code to determine if they were the same.

Step 6: Writing up

The researcher discussed the relationship between themes, and presented what the whole text portrayed (Longhofer, et al., 2013). Thematic content analysis was chosen because it allowed the researcher to save time and money and it does not require a large number of participants (Goodwin, 2005). Content analysis also allowed the researcher to re-do a part of the research if a mistake had been made, rather than other analyses that would require the researcher to re-do the entire study.

4.14 Ethical considerations

The researcher considered ethical principles in this study. Participants were informed about the ethical principles in research (Babbie, 2010). The study adhered to institutional and external ethical issues and these are discussed next.

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4.14.1 Institutional ethics

The proposal was submitted to the Department of Psychology at the University of Venda. After the departmental processes had been done, the proposal was presented to the School of Health Sciences High Degrees Committee for quality assurance. Then, it was sent to the University Higher Degrees Committee (UHDC) for approval, and, lastly, it was sent to the university's ethics committee for ethical clearance.

4.14.2 External ethics

The study adhered to the following external ethics: informed consent, anonymity, confidentiality, voluntary participation, no harm to the participants and dissemination of results.

4.14.2.1 Informed consent

Informed consent refers to the agreement to participate in a research study in which the participants have an explicit understanding of the risks involved (Cohen, et al., 2011). The researcher read the informed consent letter (see appendix 5) and information sheet (see appendix 3) to participants. The letter informed them about the purpose of the study, its aim and objectives. The researcher also explained, in detail, the procedures to be followed when doing this study. Participants were told about their rights to withdraw anytime during the study without giving reasons and that they could take with them any information that they would have contributed to the investigation up to that point (Babbie & Mouton, 2012). Before gathering data, participants were given a consent form to sign as proof of their approval to participate in the study. The researcher read for those who could not read (Greeff, 2005).

4.14.2.2 Anonymity

To ensure anonymity, the researcher, in this study, did not use real names of participants. The names of the participants are locked in a safe place and not in the same place with the data that were collected (Neuman, 2014). Participants were not identified by name in any study documents. The Patient Identification Number (PID) was used to identify participants. All records are kept in a secure place. Original signed consent forms and codes linking subject name to PID are kept locked in the principal investigator's filing cabinet. Separating the names and the data will prevent

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people from linking participants' names with the collected data. The researcher informed the participants that their real names would not be used in the study (Grinnell, 1993; Welman, et al., 2001).

4.14.2.3 Confidentiality

The participants' information will be kept confidentially. The researcher will not share the collected data with anyone else without the consent of the participants (Babbie, 2010). Participants were told how the data would be used, and they were assured that the data would be used with care. Data was only used for research purposes. In this way, the researcher ensured confidentiality of data (Gaiser & Schreiner, 2009).

4.14.2.4 Voluntary Participation

Participants have a right to participate voluntarily. They were informed about that right. Participants were told about their right to participate or to refuse to participate (Babbie & Mouton, 2012). They were informed that they could choose not to participate in the study as a whole or to refuse to answer certain questions for any reason. Participants were not forced to participate (Babbie, 2010), or to respond to questions that they did not want to respond to (Miles, Huberman & Saidana, 2014).

4.14.2.5 No harm to the participants

The researcher guarded against bringing harm to participants. Questions that might have affected participants psychologically were not included in the interview guide (Babbie & Mouton, 1998). Participants were informed that the study would not harm them in anyway. The researcher also protected the participants by not using their real names.

4.14.2.6 Dissemination of results

After the collection of data and data analysis, participants were informed about the findings of the study. This gave participants time to agree or disagree with the findings of the study (Vadum & Rankin, 1998). Participants were informed that the results of this study would be made available at the University of Venda, Department of Psychology and University Library. They were also

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informed that the findings would also be presented at both international and national conferences and would be published as an article in an accredited journal. Participants were also informed that the reason for publishing the findings is to make people aware of the phenomenon that is being studied and to contribute to future research.

4.15 Conclusion

This chapter described different research methods that were used to achieve the objectives of the study. The study was qualitative in nature, the exploratory qualitative design was used to explore the development of language in children. The study was conducted in three villages under Makhado Municipality in Vhembe District. Purposive sampling and convenient sampling were used to select both the villages and the participants. The sample consisted of psychologists, speech therapists, day care teachers, mothers and caregivers. Semi-structured interviews were used with the help of an interview guide. Open-ended questions were asked during the interviews, and the collected data were analyzed using thematic content analysis. The researcher adhered to the following research ethics: informed consent, anonymity, confidentiality and voluntary participation. The next chapter presents the findings of the study.

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CHAPTER 5: PRESENTATION OF FINDINGS

5.1 Introduction

The findings of the study are divided into two sections, namely demographic information and emerged themes. The study came up with five different themes as follows: the importance of language development in children, activities that influence language development in children, home factors that influence language development in children, early childhood education on language development, and language disorders that are associated with language development in children.

5.2 Demographic information

Table 5.1 shows the demographic information of the participants. Thirty participants were sampled to participate in the study. The sample comprised of mothers and caregivers (50%), daycare teachers (16.66%), psychologists (16.66%) and speech therapists (16.66%). Participants were people of different levels of education; 6.66% participants were illiterate, 3.33% had primary education, 30% secondary education and 60% tertiary education. The ages of the participants ranged between 29 and 61.

Table 5.1: Demographic information

Participant	Age	Gender	Level of education	Number of children	Role of participant in the study
Participant 1	55	Female	No schooling	5	Caregiver
Participant 2	35	Female	Secondary	3	Daycare teacher
Participant 3	45	Female	Tertiary	5	Caregiver
Participant 4	29	Female	Tertiary	2	Mother
Participant 5	35	Female	Tertiary	3	Caregiver
Participant 6	44	Female	Secondary	3	Daycare teacher
Participant 7	61	Female	No schooling	6	Mother
Participant 8	40	Female	Primary	3	Mother
Participant 9	38	Female	Secondary	2	Daycare teacher
Participant 10	33	Female	Tertiary	3	Mother

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Participant 11	33	Female	Tertiary	2	Psychologist
Participant 12	33	Female	Tertiary	0	Psychologist
Participant 13	36	Male	Tertiary	0	Speech Therapist
Participant 14	30	Female	Secondary	2	Mother
Participant 15	33	Female	Secondary	2	Mother
Participant 16	36	Male	Tertiary	1	Speech Therapist
Participant 17	40	Female	Secondary	4	Mother
Participant 18	37	Male	Tertiary	3	Psychologist
Participant 19	33	Female	Tertiary	2	Mother
Participant 20	38	Female	Tertiary	2	Psychologist
Participant 21	40	Female	Secondary	4	Daycare teacher
Participant 22	38	Female	Secondary	3	Mother
Participant 23	34	Female	Tertiary	3	Mother
Participant 24	32	Female	Secondary	2	Daycare teacher
Participant 25	38	Female	Tertiary	3	Mother
Participant 26	40	Female	Tertiary	4	Speech Therapist
Participant 27	35	Female	Tertiary	2	Mother
Participant 28	39	Female	Tertiary	2	Psychologist
Participant 29	37	Female	Tertiary	2	Speech Therapist
Participant 30	37	Female	Tertiary	3	Speech Therapist

5.3 Themes and subthemes

Table 5.2 shows the themes and sub-themes that emerged from the collected data. Five themes emerged, and these are: the importance of language development in children, activities that influence language development in children, the environmental factors that influence language development, early childhood education on language development, and language disorders that are associated with language development in children.

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Table 5.2: Themes and sub-themes emerged from the study

Themes	Sub- themes
1. **The importance of language development in children**	
1.1 The definition of language	
1.2 The importance of language development in children	1.2.1 Social communication and forming friends
	1.2.2 Educational purpose
	1.2.3 Communicating needs and wants
	1.2.4 Expression of feelings
	1.2.5 Understanding the world
	1.2.6 Cognitive development • Thinking and Increasing reasoning capacity • Problem solving
1.3 Challenges faced by children when their language is not developed	1.3.1 Loneliness and isolation
	1.3.2 Inability to learn social skills
	1.3.3 Discrimination
	1.3.4 Failure to express oneself
	1.3.5 Low self-esteem
	1.3.6 Self- distractive behaviour
2. Activities that influence language development in children	
2.1 Activities that influence language development in children below one year	2.1.1 Communicating with a child
	2.1.2 Non-syllables and child lead
	2.1.3 Nursery songs
	2.1.4 Pointing of objects
	2.1.5 Reading of books
	2.1.6 The use of sign language
2.2 Activities that influence language development in children from 1 year to 3 years	2.2.1 Playing with toys
	2.2.2 Pictures and chats
	2.2.3 Explaining of meanings
	2.2.4 Asking questions
	2.2.5 Turn talking
	2.2.6 Communication through sentence/ sentence expansion
3. **Environmental factors that influence language development in children**	
	3.1 Communication/turn talking
	3.2 Parents level of education
	3.3 Home socioeconomic status
	3.4 Caregivers personality
	3.5 Availability of other children

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4. Early childhood education on language development	
4.1 Definition of early childhood	
4.2 The importance of early childhood education on language development in children	4.2.1 Children learn language fast
	4.2.2 Expose children to other children
	4.2.3 Expose children to language stimulating environment and full-time caregivers
	4.2.4 Provide children with social skills
	4.2.5 Provide children with knowledge
	4.2.6 Introducing children to learning environment
5. language disorders that are associated with language development in children	
5.1 Definition of language disorder	
5.2 Disorders that are related to language development in children	5.2.1 Expressive language disorder
	5.2.2 Dyslexia
	5.2.3 Receptive language disorder
5.3 Speech disorders associated with language development in children	5.3.1 Lisps
	5.3.2 Stuttering
5.4. Psychological disorders that affect the language development in children	5.4.1 Mental retardation
	5.4.2 Autistic disorder
5.5 Conditions that affect the language development in children	5.5.1 Cerebral palsy
	5.4.2 Physical Abuse
	5.4.3 Low Apgar score
	5.4.4 Malnutrition
5.6 Treatment of language disorder in children	

5.3.1 Theme 1: The importance of language development in children

5.3.1.1 The definition of language

The study defines language as communication or a way of transferring a message from one person to the other. Language is a tool that helps people to adjust to their surroundings and to socialize with other people. Participants defined language in the following manner:

"Language is a tool that people use to communicate with each other. We use language to express ourselves or to show each other certain things, it can be skills or feelings, it does not matter whether it is spoken language or sign language, language is language and it serves the same purpose." Participant 11

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"Language is a way of communication; we use it to transfer messages from one person to the other. It is important for children to know language. It helps them to socialize with other people and to get the things they need in life." Participant 12

"Language is a way that people use to communicate with each other. It helps children to get the things they need, and it helps them to adjust to a social life." Participant 13

"Language is the words that we use to communicate with one another so that we express how we feel, what we need and what needs to be done. Language is important to children because is part of communication. Language helps children to express their needs. It can be verbal or non-verbal communication, and children may sometimes cry or use body language." Participant 23

Furthermore, the findings show that language can be in the form of spoken or written words. In addition to spoken and written language, the findings also indicate that language can also be in the form of actions or gestures.

Lastly, participants' responses indicate that language connects children to their families. This is revealed by the following responses:

"Language is a way of communication with household members or community members, language can be spoken or written." Participant 14.

"Language is a way in which people communicate with each other. It can be spoken, written or presented as sign language". Participant 17.

"Language is a means of communication. It also serves as a form of identity, belonging and self-expression. Language development in children is important because it connects children to family members, playmates, caregivers and the outside world as a whole. It is a medium of communication that people use to express themselves. it can either be verbal (use of spoken words) or non-verbal (use of gestures in order to express oneself)." Participant 20.

"Language is the way of communication and it is important because it allows children to communicate with each other. It helps people to understand each other. Language can be in the form of words or the use of symbols and signs such as body parts. You can use hands to say goodbye or your head to agree or disagree." Participant 22

"Language is a form of communication; it can be in the form of action. For example, you can use a hand to say goodbye to a child or you can use words to say goodbye to a child or you can shake your head to say no to what a child is doing. The more you use those signs; the more children learn and understand the meaning of those words." Participant 25

Based on the above responses, the researcher can, therefore, conclude that, language is a means of communication between parents and their children and that it can be both in the form of words or signs.

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5.3.1.2 The importance of language development in children

The findings of this study reveal that the development of language in children is important. It was revealed that there are many benefits that children get out of the ability to use language. The study identified ways in which language is important to children and these are presented next.

5.3.1.2.1 Social communication and making friends

The findings of this study reveal that language is important for communication. The majority of the participants indicated that language helps children to communicate with their relatives, friends and caregivers. This is revealed in their responses below.

"Language development is very important in children, more especially a mother tongue language. Home language helps children to communicate with their grandparents at home and also to communicate with each other children. Even us here at the day care center, we make sure that we teach these children their home language. Although we teach them other languages, we also make sure that they know their language much better." Participant 6

"I think it is important that children acquire language because they use language to communicate with other children, with parents, their siblings and the teachers at day care centers." Participant 2.

"I think language development is very importance. Whether it is voice language or sign language, it does not matter. What is important is that children must lean language so that they can communicate with their parents and siblings. It is through language that children learn what is expected of them. They learn rules and values." Participant 5

"Yes, I think it is important for children to learn language. Language helps children to communicate with other children, their parents and siblings. It also helps them to make friends with others. When they are able to communicate, they adjust easily to others." Participant 7

Moreover, the findings also show that children also use language for other social activities such as making friends with others, socializing with others, playing with friends and also adjusting to the community at large. Some participants had this to say:

"Language also helps them to make friends with others. When they are able to communicate, they adjust easily to others." Participant 7

"It is important that children learn language because when we are with children, we communicate with them; it would be impossible for them to communicate with us if they did not understand language. For children to adjust to other people and to the community, they must learn language so that they can communicate and interact with others socially. Besides language being good for their cognitive development, language also helps those children to communicate with other people such as their mothers, relatives and friends." Participant 11

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"Language also helps children to socialize with other children when they are playing. It helps them to make friends easily." Participant 5

5.3.1.2.2 Educational purpose

Participants defined language as a way of conveying knowledge from one person to another. Furthermore, they pointed out that language can be used to teach children things that they need to know. Education can be given to children at home or at school. Participants indicated that language is used at home and at day care centers to educate children about the norms and customs of a particular community. The following responses reveal what participants believe on the educational purposes of language:

"Language helps children to communicate with others. It also helps them to learn different things that we teach them here because we use language to communicate and to teach them different things. When they know language, it is easy for them to learn the things we teach them." Participant 2

"Language is also used in different settings such as at school." Participant 16

"As much as language is important to adults, it is also important to children. Even children use language for different things. At school and at crèche, children use language to learn things from their teachers and caregivers. This means that language can be used for educational purposes. Education can be done in different ways and may include the norms and values that are passed from one generation to the other." Participant 28

5.3.1.2.3 Communicating needs and wants

Language is very important for communicating the needs and the wants of children. The study revealed that children who can communicate are able to tell their parents and caregivers things they need. Some parents indicated that, because of work overload they have at home, they sometimes forget to give children things such as water. However, they indicated that when children are able to communicate, they will be able to request for water. The following responses highlight these observations:

"Yes, it important for children to know language. Language helps children to communicate with their mothers, in order to get the thing, they need. For example, when a child needs water, the child will tell the mother that she or he is thirsty. Sometimes, because of work overload at home a parent might forget to give a child water, but if the child is able to communicate not only by words but by gestures and action as well, the mother will know that the child needs water". Participant 4.

"Language helps these children to communicate their needs. For example, when children are hungry, they are able to tell us that they need food or if they want to go to the toilet, they tell us

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that they need to go to the toilet. Language also helps us as teachers because when a child is able to use language, we are also able to know the things that the child needs." Participant 2

Equally important, is the fact that children who can communicate are able to describe the things they need and also to explain how they are feeling.

"It is important because it enables children to communicate their needs. Children use language to communicate with their caregivers, for example, when they are not feeling well or when they are hungry." Participant 20

"It is important that children learn languages. It will help them to communicate their needs and wants to their parents or caregivers. When children are able to communicate their needs, they will be able to describe what they need. If a child does not know language or if he/she cannot use language, it would be difficult for such a child to communicate what he/she needs." Participant 25

5.3.1.2.4 Expression of feelings

Most of the participants also pointed out that language is important for children when they wanted to express their feelings. The findings show that children use language to express their feelings. In addition, parents indicated that when children can express their feelings, it gives them (parents) an opportunity to respond to children appropriately.

"It enables them to express their emotions. For example, when they are angry, you can see by facial expression that they are angry. Sometimes, they can even say that they are angry." Participant 3

"I think it is important for children to learn language because language helps children to express how they are feeling. Without language, we as mothers, will be forced to think for them. If they know language, they will be able to show us and tell us how they are feeling, and we will be able to respond appropriately. Language helps them to tell us if something is bothering them. If they need anything, they will be able to tell us if they know language." Participant 10

"Language also helps children in terms of self-expression, expressing themselves. It can help them express their feelings; if there is anything that is bothering them, they will reveal who bothered them. They will tell us if they do not want to do a certain thing or to wear certain clothes because there are certain clothes that children prefer to wear." Participant 25

"Asking them questions will also help children to learn to express themselves since language is also used for self-expression. It is important for parents to give children an opportunity to express themselves." Participant 28

5.3.1.2.5 Understanding the world

Language helps children to know and understand their surroundings. It is through language that children learn about different objects and also how certain objects are utilized.

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"Language helps children to understand the world and its surroundings. They learn all the things that are happening in the world though language. Language helps children to understand objects and the purpose of those objects" Participant 2

"Yes, language is important to children. I It helps children to know things and their surroundings. By surroundings, I mean different things in the world such as trees, stones, people and other objects such as cars and toys." Participant 5

5.3.1.2.6 Cognitive development

The study showed that the development of language also activates cognitive development. Participants revealed that, while children are learning language, they are also sharpening their reasoning, thinking and problem-solving skills. In addition, they indicated that cognitive development reduces problems such as poor language development, low self-esteem and isolation.

"When we are communicating with children there are many things that are being activated in their brains such as cognitive development. By cognitive development, I am referring to things such as reasoning, thinking, problem solving, ways of expressing oneself and word acquisition. Cognitive development is one of the most important reasons why children should learn to communicate." Participant 11

"It is important that when children are learning language, parents should also stimulate the development of other cognitive skills that may reduce the number of problems that may arise because of poor language development and poor development of cognitive skills and discrimination by other children, as well as inability to learn social skills, low self-esteem, ill-treatment and isolation." Participant 28

5.3.1.2.6.1 Thinking and stimulating reasoning capacity

Participants indicated that the development of language stimulates the thinking and reasoning capacity of a child. It was further indicated that, before children respond to questions, they think about how to respond to that question. That way, their reasoning capacity will be stimulated.

"Language also helps children to think for themselves instead of their mothers thinking for them. For example, if they need something to drink, they can choose the type of drink they want, for example, water or juice. If they are unable to communicate, we will not know what they need; we will just decide to give them anything to drink." Participant 4

"Language helps children to sharpen their minds because when one is communicating, does not just speak; one has to think about what one wants to say before saying it. When children are learning to communicate, they are also sharpening their thinking and when children respond to our questions, they think first before they respond to our questions." Participant 7

"Language is also important in terms of cognitive development of children. When the language of a child is developing, their cognition also develops. Thing such as thinking and reasoning also

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develop. When you use language, you also develop your reasoning and thinking skills. To sharpen the reasoning capacity of a child, you should use questions. It is important that you ask children questions, but simple questions. Asking those questions will enable you to stimulate their reasoning skills." Participant 28

5.3.1.2.6.2 Problem solving

Language is also important for solving problems. Participants indicated that when children are playing, they also fight for different things such as toys. When they fight, they use language to resolve their conflicts. Participants also argued that parents should teach children to apologize to each other whenever they have conflicts. It would help them learn to solve problems in appropriate ways. The following responses highlight these observations.

"*When they are playing and they have a misunderstanding, language can help them to resolve their problems. However, if they are unable to communicate it would be difficult for them to solve their problems.*" Participant 7

"Even when they experience conflicts when they are playing with other children, they use language to resolve such conflicts. Although sometimes they fight, you will still hear them apologizing to each other and continue to play." Participant 17

"Language also helps children in terms of problem solving. When children are playing, they sometimes fight for toys and other things. If they are able to communicate, they will be able to apologize to one another; they will be able to reach an agreement what games to play and how to play." Participant 25

"We also use language for problem solving; even children use it for same purpose as adults. What you can do as a parent is that, when children are playing and fighting, you should let them learn to resolve their conflicts and apologize to one another." Participant 28

The researcher concluded that, language is important for social communication, making friends, educational purposes, communicating needs and wants, expression of feelings, understanding the world, and cognitive development (that is thinking and stimulating reasoning capacity).

5.3.1.3 Challenges faced by children when they do not develop language well

In previous sections, it was indicated that language helps in sharpening the thinking, and reasoning capacities of the children. Participants also indicated that language increases the development of other cognitive skills. Failure to develop language may result in limited social skills, inadequate progress in different areas (social, emotional, psychological), and isolation because the children would be unable to express themselves, thus resulting in social stigma.

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5.3.1.3.1 Loneliness and isolation

Being unable to use language may result in the isolation and loneliness of a child. Participants indicated that, when children are unable to communicate with other children, they usually play alone, making it difficult for them to make long term friends. The study also revealed that loneliness and isolation may result due to discrimination by those that are able to communicate, or it can be used as a coping strategy to avoid being bullied by others. In addition, participants also indicated that the more they isolate themselves from those that can communicate the more difficult it becomes for them to learn language. This is revealed in the responses below:

"When children are unable to communicate, they usually isolate themselves from others. They don't play with others. They usually play alone. It is as if they feel that they do not belong with those who are able to communicate." Participant 14

"When children who are able to communicate are laughing at those who are unable to communicate, it usually results in the later isolating themselves. These children usually play alone; they do not associate with those who laugh at them. Such children usually play at home and if there is no one to communicate with at home, it makes it more difficult for them to learn language." Participant 15

"Some are often isolated from their peers because of their inability to get their feelings/views across. This could be a coping strategy to avoid being bullied." Participant 20

"Children who have challenges of using language may have problems of finding longtime friends. It is not easy for them to make friends and they usually play alone. Even when they are surrounded by other children, you will find them playing alone." Participant 25

"This discrimination may result in loneliness or isolation. They may play alone and avoid playing with others. This isolation from other children may further delay their development of language, as well as their learning of social skills." Participant 28

5.3.1.3.2 Inability to learn social skills

One of the importance of language discussed above was the usage of language for educational purpose, complementary to these children who do not develop language experience problems in relation to learning skills. The study discovered that children who are unable to learn language find it difficult to learn norms, customs and children's games.

"Besides communicating with others, it will also be impossible for such a child to learn a number of things such as norms, values and customs because such things are learned though communication." Participant 17

"When children play alone, it is difficult for them to learn things from other children. This means that children who are unable to use language will have difficulties learning games, norms,

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accepted behaviors and other social skills like toilet training, playing with other children and how to behave when there are older people." Participant 25

5.3.1.3.3 Discrimination

The study discovered that children who are unable to use language are often discriminated against by those that are able to communicate. Discrimination may result in children being laughed at by those that are able to communicate and/or the children being hostile towards those that are able to communicate. Participants indicated that children who are unable to communicate are usually hostile when they are playing with other children.

"Those who are able to communicate can discriminate against those who are not able to communicate. Children whose language is not developed are unable to play with those who can communicate because the latter laughs at and discriminates against them." Participant 15

"Ill-treatment and discrimination by other children may go together. When children haven't developed language well, they might be discriminated against by other children. When other children realize that they do not understand what they are saying, they may decide not to play with them. Sometimes this discrimination may be fostered by the hostile reaction of those who cannot use language towards those who are able to use language because they cannot express themselves and their feelings. If anyone takes their toys, they may respond in a hostile manner, and this may result in them being discriminated against by others or those that are hostile to them." Participant 28

5.3.1.3.4 Failure to express oneself

Expressing one's feelings was also found as an important aspect of language development. This study discovered that children who are unable to communicate experience problems with self-expression. They are unable to express their views when they are with others. Failing to use language leads to miscommunication and this might cause frustration and anger.

"It is important for children to learn language because if they are unable to communicate it's hard for them to express their views with other kids and it is also hard for them to play with those who are able to communicate." Participant 15

"A child's inability to use language can result in miscommunication which can lead to frustration, anger and other negative emotions. This, in turn, leads to personality disorders, as well as growth, development and learning impediments." Participant 20

"Children who are unable to communicate cannot choose things they need; they will just accept whatever you give them." Participant 22

"Children may experience challenges of being unable to express themselves if they have been hurt by someone. They will find it difficult to tell someone how they feel. They may feel shy and whenever they speak, their voices will be low because they are afraid of not being understood." Participant 27

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5.3.1.3.5 Low self esteem

The study revealed that one of the challenges faced by children who are unable to use language is a low self-esteem. Low self-esteem develops due to feelings of inferiority arising from the children comparing themselves to those that are able to communicate. Participants indicated that the children may also develop low self-confidence since they cannot communicate with others.

"Children who are unable to use language or those who cannot speak suffer from low a self–esteem. They believe that they are not like other children and they think they are inferior compared to those who can speak." Participant 19

"When they are rejected and discrimination against by others because of their failure to use language, children become lonely and isolated. Sometimes this leads them to a low self-esteem, and low self-confidence. They may believe that they are not as competent as other children and that will make it more difficult for them to learn language." Participant 28

5.3.1.3.6 Self-destructive behaviour

The participants indicated that children who are unable to communicate may display self-destructive behaviours.

"Children who cannot express themselves are often irritable; they might throw tantrums and may engage in self-destructive behaviours." Participant 20

5.3.2 Theme 2: Activities that influence language development in children

The study discovered that there are many activities that can be done by caregivers and parents to foster the development of language in children. All activities that helped in the development of language in children were linked to cognitive stimulation. This affirms the argument that development of language also stimulates cognitive development. In this study, the activities that can be used to foster the development of language are divided into two categories as follows: those that can be used to foster language of children below one year; and those that can be used in children between one year and three years. Some of the activities include communication, toys, books and pictures.

"Engaging the child with things that are cognitively stimulating, such as reading books or stories is important. You can also use toys to engage the child. It is important to use books with pictures such as drawing books where you can point to a picture to encourage the child to say the name of that picture. If the child does not know the picture, you can name the picture and allow the child to repeat what you have said. That will enhance the way they pronounce names of particular objects." Participant 12

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5.3.2.1 Activities that influence language development in children below the age of one year

The study discovered that activities which influence language development depend on the age of the child. The following are activities that can be used to foster language development in children who are less than one year old.

5.3.2.1.1 Communication with a child

The study indicated that communication is the most valuable tool for fostering language development in children. Although all activities can also be used, communication with the child is the most crucial tool in fostering language development. Participants indicated that parents and caregivers should always communicate with children. Communication with children exposes children to language by familiarizing them with words.

"Number one activity that I use is to communicate with the child. Children learn language when they are communicated with them; that is how they get to know words and when it is appropriate to use those words." Participant 3

"Language can be fostered through communicating with the child. It is important that parents communicate with their children all the time to help them to learn language. When parents do not communicate with their children, the children will find it difficult to learn language. When parents educate their children on language, it is important to start with simple words. Parents should not use sentences because sentences would make it difficult for children to learn language." Participant 16

"Parents can use a number of activities to influence development of their children. The most important thing is to communicate with them. Children learn words that are spoken to them daily." Participant 28

"A number of activities can be used to activate the usage of language in children and all activities require the involvement of caregivers and parents. Parents must use vocalization to foster language in children vocalization is the most important activity. Children should be communicated with to help them to use language. We should also buy them things and toys to foster language. For language to develop, there should be communication between the caregiver and the child. It is important that children are communicated with even when they cannot understand language. In fact, communication should start during pregnancy; this will, make the words and different sounds of language familiar to the child. After birth, it will then be easy for them to remember the sounds and words they had heard during pregnancy." Participant 30

The majority of the participants indicated that language should start as soon as children are born. When parents communicate with children from birth, it makes words and sounds of language familiar to the children.

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"I play with the child while talking to him/her and I also use sign language such as shaking my head when I am saying no. It is important to children, even newly born babies so that they get used to the sounds of the language. This will help children to learn language because they already know some of the sounds of language. It is also important to refer to children by name when talking to them. It helps them to know their names". Participant 4

"Talking to a child while the child is still very young only helps that child to memorize words. It familiarizes the child with the language even if the child is not yet able to say words".
Participant 6

"I always talk to my newly born babies. Even though they are still too young to respond, I feel that they understand me. In that way, I encourage them to talk." Participant 10

"Language is for everyone; even children must know language. Language should start just after the birth of a child. Some people even start before the child is born, that is when the mother is still pregnant. When you see us using language, it didn't start now; it started while we were still very young, during infant stage. Communication between the mother or the caregiver and the child is very important. If you do not communicate with a child, the child would find it very difficult to learn language; that child will not know language. If the children are still very young, parents should repeat words several times so that they can learn those words. The more the parents repeat words, the more the children learn the words. For example, if the mother always says 'mom' to the child, that child will learn to say 'mom' within a short space of time because the child is being exposed to that word repeatedly." Participant 11

Nevertheless, some participants indicated that communication with the child should start during pregnancy. This will enable parents to introduce children to language before they are born.

"Language should start just after the birth of a child. Some people even start it before the child is born, that is when the mother is still pregnant". Participant 11

The study found that when parents communicate with the children, the latter tends to learn the words that parents speak repeatedly.

"I use communication; I speak with the child. When I speak with the child, he/she learns words that I will be repeating most of the time. What is important is that as a mother you should communicate with your child and repeat words all the time so that the child would get used to the words". Participant 22

"Language fostering tool is communicating with a child. It is important that parents talk to their children. No matter what they do, if they don't communicate with their children, the children will not learn any word. So, it is important that they communicate with the children even when they are still very young. Communicating with them will familiarize them with the words and sounds of the language. Mothers should play with their child, and as parents they must also communicate with the children during feeding and bathing time." Participant 25

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5.3.2.1.2 Non-syllables and child-lead

Non-syllables are when parents repeat the bubbling sounds that the children produce. The study discovered that when parents repeat such bubbling sounds, they encourage the children to keep on doing or repeating such bubbling sounds. Some participants had this to say:

"From the age of six months, the mothers should start incorporating non-syllable sounds play like imitating the babies' bubbling sounds. Using baby words and telling stories using books that have huge pictures and less words is important." Participant 13

"There are a number of activities that can be done by caregivers to foster the development of language in children, depending on the age of the children. When children are still under one year, there are things such as non-syllables. These arise when mothers imitate the sounds that the children would be trying to make. By doing so, mothers will be encouraging the child to communicate." Participant 26

"The use of non-syllables, that is imitating the sounds children make, is important, from those sounds, a child is encouraged to produce more sounds and unfamiliar words. If parents are not there to encourage their children, the children would be more likely to reduce the sounds they produce." Participant 29

"Parents can also imitate the sounds that children make. This is possible if parents give themselves time to play with the children. Imitation of sounds can happen when the child is playing. When children imitate and repeat sounds, this may lead to production of words." Participant 30

Non-syllables lead to vocalization of words. The study findings show that it is important for parents to practice child lead. Child lead is when parents repeat the words that the child tries to pronounce. When children start to move from non-syllables to words, parents should be there to repeat the words that children will be trying to vocalize. Doing so will encourage the children to continue to vocalize words.

When the children are at the age of one-year, parents should do an activity called child lead. Child lead is when one does what a child wants to do. In other words, parents do what the children want to do." Participant 13

When children start to produce words, mothers are advised to do child's lead. When we are talking of a child lead, we are referring to occasions when a child is the one who starts saying the word and then parents repeat the words after the child. Repeating the words will encourage the children to say more new words." Participant 26

"When children start to produce words, parents should encourage them by repeating the words that the children might be producing." Participant 29

"When children start to produce words, parents should imitate those words, but they should not correct mistakes that the children are making. They should only repeat the word correctly. The

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disadvantages with trying to correct the words is that the child might feel like he is not capable and stop trying to communicate. However, saying the word correctly stimulates the child to try the word again." Participant 30

Parents in this study indicated that, during child lead, parents should listen to the words that the children are trying to pronounce, in order to correct mistakes that the children will be making when pronouncing such words.

"I repeat the things that my children try to say in order to correct their mistakes. If they say a word incorrectly, I disagree with them and then I repeat that word correctly. This will help the children to repeat those words correctly. The more I repeat a word, the more the child tries to say that word again." Participant 9

In contrast to this, speech therapists who were interviewed indicated that parents should not correct mistakes that children make when they are saying words. Instead, parents should pronounce the word correctly rather than try to correct the child. It was also indicated that when parents keep on correcting mistakes that children making during child lead. This can lead to the development of non-competent feelings which can lead to discontinuity of pronunciation of words.

"At this time, if children make mistakes, parents must not try to correct the mistake. If they correct the mistake, there is a possibility that the children may think that they are inferior and stop producing new words. What the parents should do is to say the word correctly. This will help the children to pronounce the word correctly." Participant 26

"They should not correct the mistakes made by children when they are trying to pronounce words because this would lead to children not producing such words. If children mispronounce words, caregivers/parents must only pronounce it correctly. In that way, children will try to pronounce it correctly." Participant 29

5.3.2.1.3 Nursery songs

The findings show that nursery songs are also used to foster the development of language in children. Both parents and caregivers indicated that they use nursery songs to foster language. The words in nursery songs are simple and this makes it easy for children to learn and try to sing those songs. The findings also indicated that nursery songs have been used by different generations to foster the development of language in children. This observation was supported by the following participants:

"I always sing nursery songs for my children. Whenever I sing for them, they also try to sing with me. As they learn to sing those songs, they also learn words that are associated with the song; it becomes easy to explain the meaning of those songs." Participant 1

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"I use rhymes and songs (zwidade). While the older children are singing rhymes and songs the younger ones learn language or produce words from such nursery songs. The words in such songs are so easy that those who are even less than 2 years old will try to say them even though they do not know the meaning of these words. Songs help children to know the words, and this makes it easy for them to remember those words" Participant 6

"I also used songs and rhymes. The word in the rhymes are very simple, and because you sing those songs almost every day, children learn those words easily. Even when I was still young, my mother used to sing for my siblings, and the reason was to foster their language development. Songs and rhymes have been used throughout different generations." Participant 7

"Activities that can be used include singing and talking to the baby when you are feeding, bathing or engaging the child in other activities. You must make sure that you communicate (baby talks) with the child and maintain eye contact; this is called language stimulation." Participant 13

5.3.2.1.4 Pointing of objects

The findings reveal that parents and caregivers also point and name objects to help children to know those objects. Participants indicated that when they need a child to give them anything, they point to the object that they need and at the same time they call that object by its name. In this way, children will be helped to link the object and its name. These observations are revealed in the following responses:

"I also point to objects or to drawings on the wall and refer to the drawing by its name or by its colour." Participant 2

"You can also point to things. For example, if you want a child to pick up his/her shoes, it is important to point to the shoes that you want the child to give you. If you keep on pointing at things slowly, the children will get to know the names of those objects even if you do not point to them." Participant 8

5.3.2.1.5 Reading of books

Reading of books can be used to stimulate the development of language in children. Books that should be used should have big colourful pictures, in order to get the attention of the child. Participants indicated that when parents repeatedly read books to children, the children will learn the words that are in those books. The following responses highlight these observations:

"I think that reading books is important when it comes to language development. Even when children are very young, mothers should read books for them. Besides reading books, you can use books with different pictures and colours to point to a picture and name the picture. This will help the child to know different pictures in the book." Participant 4

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"We have lot of books here that we use. We read stories to the children. When they listen, they grasp words and sounds of words. When we are reading stories, we will also explain the words and their meanings to the children and at the end of the story, we try to summarize the story for the children. Reading of stories helps children to know words, including those words that are not used on a daily basis." Participant 6

"Engaging the child to do things that are cognitively stimulating, can be done either through reading of books or reading of stories. It is important to use books with pictures such as drawing books, to enable you to point to pictures and to encourage the child to say the names of objects in the picture. If the child does not know the names of the objects in the picture, you should name the object and encourage the child to repeat what you would have said. That will enhance the way they pronounce names of particular objects. Parents should also consider reading bedtime stories because these are simple, and the words used are very simple." Participant 12

"Parents can also use books to read stories to children. When they repeatedly read books, children will learn the words that are repeated in the story. Books that should be used are those with colourful pictures, in order to get the attention of the child." Participant 28

Although participants were aware that reading books can be used to foster the development of language and that books are language fostering tools, the findings show that most mothers do not use this method to foster language development.

"Yes, I think books can also be used to help children learn language, but I can't read to someone who does not even understand what I am reading." Participant 1

"I don't think reading books can be used because it is difficult to read a book for someone who doesn't even understand what you are reading, and reading is time consuming and it will require parents who are able to read. As for me, I cannot even buy a book for a child who cannot even read." Participant 7

"Book? (She laughed) I cannot read for a child. I don't have that time to waste. Even if I try, the child will not even understand what I am reading." Participant 8

5.3.2.1.6 The usage of sign language

Participants indicated that language can be both spoken, written or in the form of action. The study revealed that sign language can be used to foster language development. Participants indicated that when using sign language, it is important to also point out or demonstrate the action, in order for children to understand the message being conveyed to them. The following responses reveal what participants believe on the usage of sign language:

"Because you will be talking to someone who does not know the words of the language that you will be using, it is important to point to objects so that they can understand what you are saying. For example, if you are talking about the doll, it is important to show the child the doll. This will

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help you in future when you are talking about the doll because they already know that a doll is. It is also important to use sign language so that children are able to associate words with action. For example, if you want the baby to come to you, you will say come while at the same time gesturing with your hand or if you are going, you will say bye- bye, while waving a hand. If you just say bye-bye and you do not wave your hand, the child might not understand the meaning of bye-bye." Participant 6

"Even when they are still very young and they are unable to communicate, they use sign language, such as facial expression, to indicate when they are happy or sad. Sometimes they use sounds such as crying or laughing. However, sounds such as those are not better compared to language because as the mother you will not get the true meaning of such sounds. Only if they are able to talk will they tell you what they are feeling." Participant 10

"Besides repeating one word, you can also use sign language or sounds; that is when you are communicating with them but without the usage of words. With sound, you can use sounds such as aaaaaa. When children are still very young and they urinate on themselves, the mother might say aaaaaa. The mother might say the sound repeatedly every time the child urinates on himself/herself. With time, the child will say aaaaaa when he or she urinates on the cloth. With sign language, you might shake your head to say no; the child will learn that shaking one's head is the same as to saying no. For example, if you shake your head every time you disagree with the child, the child will also learn to shake his/her head when he or she disagrees. The same thing will happen when you wave your hand to indicate that you are going. The child will learn that waving is related to going. You might find the child waving to people when they are passing by or even animals. When you use sounds, signs and words together, children learn the action and its meaning." Participant 11

"Communication can be in the form of words or gestures. The use of gestures is also important in the development of language, especially when the child is 0 to 1 year old. Simple gestures, such as shaking one's head to say no, or waving a hand to say bye-bye are easy for children to learn, but it is also important that when one is using those actions or signs to communicate with the child, one would also say the name or meaning of the action to help the children to link the action and its meaning." Participant 28

In conclusion, several activities can be used to foster the development of language in children. Most participants indicated that when children are still less than a year old, they communicate using nursery songs and sign language and by pointing to objects. In addition, speech therapists and psychologists indicated that three more activities can be used to foster language development, namely non-syllables, child lead and reading books. Nevertheless, the majority of mothers and caregivers said they do not used those activities.

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5.3.2.2 Activities that influence language development in children from 1 year to 3 years old

The study identified the following activities as appropriate for fostering language development in children who are between one year and three years old.

5.3.2.2.1 Toys

Findings show that toys resemble real objects. Toys can be used to introduce children to names of objects and how those objects are utilized. It is important to use colourful toys to get the attention of the child. These toys will help them to learn both the names and colours of the objects.

"They can also buy toys for them and tell the children the name of those toys. Probably children will get used to the names of those toys, memorize their names and learn to use them appropriately." Participant 12

"Toys can be used to foster the development of language in children. As the children play with the toys, they might also try to name them and, at the same time, try to communicate with those toys." Participant 19

"Parents can also use toys to foster language. Toys represent real objects that exist in the world so they will help the children to learn the names of the objects and different colours". Participant 26

The study also revealed that toys can be used to teach children the purpose of the objects by demonstrating how those toys are used.

"I use toys and drawing (chats); we teach children to know different objects using toys. For example, I can use a toy car to teach the child what a car is, and I might also drive it and say I am driving a car. I might name all the toys that the child will be playing with and also demonstrate how those toys work or how they are used. This will enable the children to learn language with ease and quickly." Participant 2

"Toys are the most important tools you can use to teach a child to communicate. Children love toys and colours, so when they are playing with toys, you can also help them to learn the name of the toy, its colour and its purpose. For example, I have a baby girl and she have a toy of a pot which she likes playing with. I usually tell the baby that this is a pot, that the pot is pink, and that I use the pot for cooking in the port. I say this while demonstrating how to cook. So next time when my child is playing with the pot, I will ask her what she is doing with the pot. This will help the child learn that we use a pot to cook." Participant 5

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5.3.2.2.2 Pictures and chats

As indicated above children are attracted by colourful things. The study indicated that colourful pictures and chats can be used to foster language development. Participants indicated that they point to pictures, while talking about the picture and explaining the picture to the child.

"We also have pictures and chats. Pictures can be in a book, chat or on a wall. I will point to the picture and tell the child what the picture is all about. I will try to explain the picture to the baby. If the picture has water I will point to the water and say 'water'. I will tell the baby that the water is from a river, that we use water to drink, for cooking porridge or for bathing." Participant 2

"I also use pictures and chats. As you can see, on our walls we have all these things to teach children language. To help children learn the colours, I use chats and pictures. Those pictures can be on the wall or in a book. This will help the children learn shapes, words and colour. When I am using pictures and chats, I show the children pictures and ask them to repeat what I am saying. For example, I will say to the child 'this is a picture. This is a picture of a girl and the girl is wearing a long white dress'. When I say all these things, I encourage the children to repeat what I am saying, so that those who do not know how to talk, will learn the new words or produce sounds that are related to language." Participant 6

"Besides asking questions relating to real objects, you can use objects such as pictures in chats. You can point to a picture and let the child explain or tell you the things that are in the picture. You might find that some of the objects are not there in their homes. However, children should know them. In this situation, children can learn the names of those objects from pictures." Participant 28

5.3.2.2.3 Explaining of meanings

Participants indicated that when children are above three years old, parents should shift from pointing to objects to explaining such objects. The study shows that to increase vocabulary of a children, parents should explain the usage of objects and meanings of behaviour to children. This is revealed in the participants responses below:

"Communicating with the child is the most important activity for a child. Children learn language when they are communicated with them; that is how they learn words and when it is appropriate to use those words. For example, when you want them to learn to walk, you should hold their hands and help them to walk. While doing so, you should be telling them that they are walking so that they are able to know the activity they are doing. If a child is playing in the water and you want to take her out of the water, you should indicate that he or she should not play in the water." Participant 3

"In addition to talking to the child, I also point to objects I try to help the child learn words and names of objects by pointing to and naming those objects. For example, if a child needs water, I will point to a glass of water and say, 'this is a glass; the glass has water.' I will then ask the child if he/she wants to drink water. This will help the child learn what a glass and water are and the

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purpose of the water. Objects can be in the form of toys, real objects or drawings in a book, but I prefer toys and real objects because the child will be exposed to them for a long time and they will get used to the name of the toy." Participant 4

"The other thing you can do is to explain things to a child. If you need a child to know what a cup is, you must tell the child that this is a cup, and you must also tell him/her when and how to use that cup. Explaining things to them will help the children to know different things and their functions. When you are explaining things to them, you should also ask them questions such as 'what is this? what is it used for? That would indicate to you the things that the children know and understand." Participant 25

"*When children turn two years parents can also point to objects and explain those objects. What parents can do is to point to the objects, say their names and how they function. Explanations will increase the words that the children know and help them to use those words in a sentence."* Participant 28

5.3.2.2.4 Asking questions

Asking children questions was identified as another way of stimulating both the language and the cognitive development of a child. The study indicated that questions give children an opportunity to express themselves and to describe the things they want.

"When they come to us, we asked them what they want. Even when we are giving them something, we tell them the name of the thing that we are giving them. For example, if we are giving them an apple, we tell them that this is an apple". Participant 2

"After saying one thing several times, I ask the children questions relating to what I would have been explaining. For example, I will ask them to show me the girls' hair on a chart. If one of them successfully identifies hair, the rest of the class will clap hands. The reason for asking questions is to know if they understand and to help those younger than three years to learn the parts of the body. From there I will ask them to touch their own hair". Participant 6

"You can also use questions to find out if they need something. For example, if they are hungry, you could ask if they need pap or if they need bread, or if they need juice or water. If they respond by pointing to an item, you should ask them to say the name of the food they have pointed to. This will help them to differentiate the different types of food." Participant 8

"This is the time when parents could also ask children to express themselves. For example, they could say what they want to eat. That way, the children cannot just say they are hungry, but they will also explain or describe what they want to eat. These kinds of questions will enhance the development of language, reasoning capacity and self-expression". Participant 26

"You can also use questions to help a child to differentiate among objects and to learn how to use those objects. You can also use the objects to explain in detail the things they need. If children say they need something, you should allow them to explain in detail what they need. For example, if children say they are hungry ask them what they want to eat." Participant 28

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5.3.2.2.5 Turn talking

The findings show that turn talking arises when parents are talking to their children. It gives children time to talk while their parents are listening. The findings further report that turn talking fosters development of language because it gives children an opportunity to think and respond to questions. The study shows that when parents listen to children, they give them an opportunity to express themselves.

"With all my children, I always turn talk with them. Although sometimes when they respond, I don't even understand them, I continue to talk to them. It is important to talk to a child even when the child does not understand you or cannot respond to what you are telling them." Participant 7

"Talking with a baby is an important activity that a mother or a caregiver should use to teach a child to communicate. When you have time to speak to a child, that child will get used to the words and the sounds of language and this would make it easy for the child to learn language. Even when babies are still very young and even when they cannot produce words, they do listen. So, it is important to communicate with them. I say they listen because when you communicate with them, they keep quiet and when you keep quiet, they try to produce sounds showing that they are listening and trying to communicate. When they try to make such sounds, we should continue to speak with them so that we motivate them to respond to us." Participant 5

5.3.2.2.6 Communication through sentence (sentence expansion)

The findings show that when children are growing up, it is important for parents and caregivers to shift from words which they use when communicating with a child to sentences. The study also reveals that the usage of sentences when communicating with a child gives the child an opportunity to use words appropriately.

"From the age of 18 months, the parents should start with words and sentence expansion. When parents communicate with their children, they should use sentences more than words because this is the time when children already know quite a number of words and should learn to use them in a sentence." Participant 13

"When children are between 1 year and 3 years, parents should use word expansion. This is where parents communicate in sentences instead of words. Word expansion helps children to use words in the form of sentences. Word expansion also helps children to think about how and when to use a word, thus sharpening their cognitive skill." Participant 26

"When parents realize that their children know several words and understand those words, they should extend the use of words to sentences; that is called word expansion. This will help children to use words in sentences." Participant 29

"They can also sing to children or read stories for kids, in order to introduce them to words. When children know several words, parents should start to communicate with them using simple sentences that are understandable to children." Participant 3

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Nevertheless, participants argued that parents should use simple sentences and convey them in a soft and uncomplicated way to children, while at the same time avoiding the usage of motherese (usage of baby language).

"I use communication to stimulate the development of language in children. The more I communicate with the child, the more the child learns to use everyday words. I explain to the child the meaning of most of words that I use. Sometimes I show the meaning by demonstrating its meaning, for example, I will say bye-bye while I am waving my hand and leaving the baby. Doing that would help the child associate the word and the action. In this way, the child will learn words fast." Participant 2

"The most important thing to do I think is to talk to the child in a soft way. You need to be sweet if you want a child to learn language easily. You should not harass the child. It is also important to listen to children when they are trying to talk so that you can correct the mistakes that they make and also respond to them. When I talk to a child, I use normal language not baby talk; even if the child responds to me with baby talk I use normal language all the time. If you use baby talk, I think it will delay them in communicating effectively. When you need a child to learn language, you must dedicate your time to that child." Participant 3

The researcher concluded that when children are between one year and three years, participants use more advanced activities to foster the development of their children's language. At this age, participants indicated that they use toys and pictures to explain objects, as well as turn talking, asking questions and sentence expansion.

5.3.3 Theme 3: Environmental factors that influence language development in children

5.3.3.1 Environment factors that influence language development in children

The study came up with several environmental factors that can be used to help foster the development of language in children. The following environmental factors were identified in the fostering of language development: communication, parental level of education, socioeconomic status of the home, caregiver's personality and the presence of other children in the family.

"A language fostering environment is an environment which is full of things that foster language development. This is very important if you need a child to learn anything you must expose the child to such a thing. So, if you need a child to learn language expose the child to the environment that will allow the child to learn language, for example, an environment where there are people using the language that you want the child to learn. If, for example, you want a child to learn Tshivenda, you must expose the child to an environment in which the child will be exposed to people who speak Tshivenda. As those people are communicating, the child will be grasping the

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words and sounds. It does not matter whether the people are talking to the child or to others. Yes, it is important to speak to a child; it helps the child to learn language. Talking to a child is important." Participant 6

5.3.3.1.1 Communication/ Turn Talking

Communication has been revealed throughout as the most valuable tool to foster language development. The study participants confirmed this indicating that it is important to expose children to the environment where there is communication. Communication can be among adults, but it is also very important that parents communicate with the children. They indicated that even when the children are exposed to an environment with several language fostering tools, if there is no communication, children will not be able to learn language. The study reveals that; besides toys and books, it is important for parents to provide an environment where language is used. The following responses highlight these observations:

"I think the home environment where there are people at home who will be communicating with the child is a good environment for a child to learn language. Children learn language when there are other people who are communicating with them." Participant 9

"It should be an environment where language is used, communication is important. A child can have a lot of toys, books and everything, but if there is no communication language will not develop. A child can grow up without toys, but if there are other children around, that child will learn language perfectly. What I am trying to say is that an environment where there is communication is the most essential tool for language fostering." Participant 11

"Family members should spend time with a child. It is important for family members to spend time with the child during this time, they must communicate with the child. It is important for children to have a good relationship with their mothers because mothers are the ones who do a lot of work when it comes to language development". Participant 13

"An environment where there is communication fosters language development for children and enables them to communicate with both their helpers and parents." Participant 19

"Home environment where people communicate with each other and with the child is important. An environment should expose a child to language because children learn language through hearing a particular language." Participant 24

5.3.3.1.2 Parents' educational level

The study also revealed that the educational level of parents plays a role in the development of language in children. It was revealed that parents with high educational levels expose their children to language fostering environments more than those with lower levels of education. The

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study shows that parents with high levels of education expose their children to language stimulating things such as books and toys.

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"The educational level of parents is also important. When parents are educated, they understand the importance of language development and know the activities they can do to foster its development. So, their children stand a great chance of being exposed to a variety of things that foster language development." Participant 29

Participants indicated that an environment with books is a language fostering environment. When asked to indicate activities that can be used to foster language development, reading of books to children was mentioned by participants as one of the ways that can be used to foster language development.

"It is also advisable for children to be exposed to books, drawings and charts. Those books should be colourful and attractive. Children are attracted by big colorful pictures. Parents will use the books for either reading stories for the children or to point out pictures." Participant 28

It was also indicated that children should be exposed to an environment with toys. An environment with toys stimulates the development of language.

"There should be toys; toys are very useful when it comes to language development. It is important to have different toys, such as cars and dolls and building blocks. With building blocks, you can tell a child to build different things and you also tell the child what those things are and how to use them. They help children to learn language with ease. Children are very clever; when you give them a toy, they will try to figure out how to use it." Participant 2

"If children grow up in places where there are toys, charts and books, they will learn language fast. If I am playing with a ball I will say to the child, 'this is a ball, the ball is white, and I am kicking the ball'. While saying that, I will be kicking the ball. If I am playing with a doll, I might say to the baby 'Her name is Mashudu. The baby has ears. These are ears. While saying that, I will be touching the ears of the doll." Participant 3

"Toys are also important at home. As I have indicated before, you can use them during language development of a child. By naming the toys and demonstrating the way they are used, you will be helping the child increase his/her vocabulary. This will also help the child to differentiate the usage of different objects." Participant 4

"Also, an environment with toys to play with can foster language development in children. Toys attract children; children may learn names of objects through toys and such toys can also attract children from other families. Other children will come and play with the owner of the toys and while they are playing, the younger ones will be learning words and names of toys from those that are older." Participant 23

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5.3.3.1.3 Socioeconomic status of the home

The socioeconomic status of the household was also identified by participants as having an impact on the development of language in children. Some participants indicated that children from a high socioeconomic status are exposed to a language fostering environment, hence they learn language fast. It was further indicated that those children are exposed to things such as radio and television and that they play around with language fostering tools.

"Socioeconomic status of the family and education status of the household plays a role on language development. Children who are born in the family with high levels of education tend to learn language faster than those from families with a lower educational status." Participant 13

"Socioeconomic levels of parents also have an effect on the development of a child's language. Those that have a high socio-economic level are able to expose their children to a number of activities that foster language development than those from lower socio-economic levels." Participant 26

"Socioeconomic level is also important. When parents have money, they expose their children to a number of activities that may lead to language development. That maybe because even the parents themselves are exposed to such activities. They are able to buy books that show and indicate the activities they can do to foster language development." Participant 30

The study showed that both radio and television can expose children to words and sounds of language. However, participants indicated that televisions are useful when children are being introduced to a second language. The study also indicated that some radio programmes aim at introducing children to nursery songs and children's games.

"An environment with language stimulating things is also important. An environment with things such as Television and radio will expose the child to sounds even if the parent is not with the child." Participant 5

"Besides communicating, it is important for children to be exposed to things that convey language such as radio and television. There should be time when children listen to radio or television. This would help them to try and produce sounds". Participant 6

"I think radio and television can work. If children are growing up in an environment where there is a radio, they will learn some words through radio." Participant 8

"Watching TV shows and having the show explained by parents is important. Every time we do something with children below 1 year, we must talk so that they can learn language. We can use toys to communicate; we can use TV shows and toys communicate and play simple games with the children." Participant 14

"Television can be used to foster language development in children, more especially when a child is learning English if the language is used most often. There are cartoons that play on television

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and those cartoons are very important and useful when it comes to helping children learn language." Participant 19

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"*You can also expose children to television programmes such as Yo-tv. Such programmes help children to learn language. The good thing is that they are broadcasted in different languages. Therefore, they expose children to different languages. Radio also helps children to learn songs and new words.*" Participant 22

Some parents, however, disagree that the usage of radio will foster language development since radio does not explain words to children.

"Radio mmmmmmmm (She shakes her head). No, I don't think radio can work to influence language. Radios cannot do. Radio cannot explain words to children." Participant 1

"Radio does not foster language development in children. For language to develop, there should be someone who will be explaining words to the child." Participant 7

The findings also indicate that the availability of a playground is also important in fostering language development. It was revealed that the playground motivates children to play.

"Availability of a playground also plays a role in language development. Children who are given opportunities to play, learn language fast and easily." Participant 13

"Availability of a playground and friends to play with is also important. The playground helps children with motor co-ordination. If there is a playground and other children to play with, this would help the children to learn language from one another." Participant 26

"It is also important to provide children with a playground, toys and books. All those things will also need communication. The availability of a playground motivates children to play. They might play with toys and other things, but it is important that they don't play alone. They should be with someone who will be communicating with them. Even the presence of other children can work because they will be playing with other children, and they will learn language from those who are able to communicate." Participant 30

5.3.3.1.4 Caregivers personality

The personality of caregivers/parents was identified as a very important factor in the development of language in children. Parents/caregivers are a most important key to language development. Their personalities can influence children to communicate or discontinue using language. The study revealed that caregivers' who are supportive and patient reinforce and motivate children to learn language.

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The study shows that for a language to develop, it must be reinforced. Parents should positively reinforce children whenever the latter try to pronounce words. The study indicated that positive reinforcement can be in the form of smiling, clapping hands and repeating the words that a child is trying to pronounce. In addition, participants indicated that when children are positively reinforced, they tend to learn language faster.

"It is important that children are encouraged when they are learning language. Positive reinforcement builds a child's confidence. The more parents encourage children when they try to talk, the more those children will talk." Participant 13

"Reinforcement is important. Parents should reinforce their children's efforts to communicate. They can do so by clapping hands when a child says a word or by smiling or imitating what a child is saying; that is by child lead." Participant 26

"Parents may support children in the form of reinforcement, positive reinforcement. They can do that by smiling, clapping hands or repeating the words spoken by the children. When parents encourage children by repeating words they would have spoken or by even trying unfamiliar words the child would be motivated to learn language. If a child says a word and the mother tries to say that word, the child is more likely to repeat it." Participant 28

The study also found that over correcting the children's mistakes can lead to non-production of words by children. Complementary to this, parents who do not correct the words but instead say the words correctly promote the usage of language.

"During child lead, parents are discouraged from correcting the children when they make mistakes or mispronounce words. Instead, parents must repeat the words correctly." Participant 13

"Now, if children make mistakes, parents must not try to correct the mistakes. If they correct the mistakes made by the children, there is a possibility that the children may think that they are inferior. This could result in them not producing new words. What parents can do is to say a word correctly to help the children to pronounce the words correctly." Participant 26

Learning language is not an easy task; It requires patient caregivers. The study indicated that, sometimes, even when parents are helping a child to learn language, children take time to do so. This could be because of the presence of language disorders that make it difficult for children to learn language. The study indicated that, because of all these challenges that children may face while learning language, it is important for parents to be patient with their children.

"The environment should be filled with love and the parents should be patient. It takes time and courage for a child to use language. The mother should therefore be patient. There are times when you tell a child one word 100 times and yet the child will still fail to produce it. Even when a

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child is unable to say a word that you have repeated several times, the mother should be patient. With time the child will learn." Participant 5

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"There is nothing else that you need. The important thing is that you should be there for the child and that you should be patient with him or her. To learn language is not easy and children find it difficult but as mothers you should be there for your children. There are children who learn language very late; even if you are trying to talk to them, they will still struggle to learn language. So, these children need a parent who is very patient because it is not their choice to learn language late". Participant 7

"It doesn't mean that when children are encouraged, they will automatically pronounce words. Patience is needed. It may take time for children to speak. Even when it is hard for a child to speak, parents and caregivers must be patience. Toys can also be used to enhance the development of language." Participant 28

The study discovered that a supportive caregiver influences language development. The study showed that parents should show love, have a good relationship with their children, as well as fully support them.

"A home environment which is full of love and support is important for language development because, for children to learn language, they need the support of those who are always around them. They also need courage. Support is seen when the mother corrects and pronounces the words clearly and correctly for a child. Encouragement can be in the form of clapping hands when a child tries to produce a word." Participant 4

"It is important that there is a good relationship between the child and the caregiver. A good relationship encourages the child to communicate; a good relationship involves supporting the child to talk and reinforcing communication." Participant 26

"The surroundings of a child are important in language development. The environment should be full of support. Learning language is not as easy as it looks; it is challenging for both children and parents. Parents should however support their children on that journey." Participant 28

"To encourage the child to use or develop language, there should be a good relationship between the child and the parent. Language development requires courage and parents should encourage children try and pronounce words or sounds. They can do that by repeating words and sounds." Participant 29

5.3.3.1.5 Availability of other children

Availability of other children in the family was also identified as an important factor in the development of language in children. Those that are able to communicate will teach language to those that are not able to communicate. Participants even indicated that they even call their neighbors' children to come and play with their children, in order for their children to learn

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language fast. Extended families and day care centers were also mentioned as an environment that can be used to expose children to other children.

"It is also a good opportunity for a child to grow up in a family where there are siblings because children learn language when they are playing with other. Siblings play with the child while talking to the child. This will help the child grasp words and sounds." Participant 4

"Siblings are also important. Children who are surrounded by siblings learn language faster than those who grow up in a family without siblings. I saw it with my first born and my last born. My first born took two and half years to communicate, but my last born took 1 year and half because she had siblings to play with. When they were playing with her, they talked to her and that is why she learnt to talk at a very young age." Participant 8

"Children learn language from day care centers or from siblings. I prefer a house full of children. During weekends, I invite my relatives' children to come and visit me because my children do not have siblings. When the house is full of children, my children will learn language from them. Yes, they will break things and the place will be dirty, but I don't mind because I understand the importance of having those children around my children. They learn language together with coordination. Activities like driving toy cars and playing with different toys at the same time helps them to learn the names of those toys. They will learn the children's games from others, for example jumping and dancing to mention a few. They end up learning different things. Sometimes, even as a mother, you wander where the child learnt the activity. t. To be honest, parents do not have time to play with their children. They are usually at work from morning till late and when they get home, they are too tired and just want to sleep." Participant 11

The researcher concluded that an environment with communication and other children fosters the development of language in children. In addition to this, the personality of the caregiver is important. Some participants also indicated that environmental factors, such as parental level of education and home socioeconomic level has an impact on the development of language.

5.3.4 Theme 4: Early childhood education on language development

5.3.4.1 Definition of Early childhood education

Participants defined early childhood education as an education which is given to children from the age of one year to five years. The findings showed that this education can be done at home or at day care centers. However, the findings also show that parents prefer to use day care centers than to teach the children themselves.

"Early childhood education is when a child is being taught simple words such as his or her name, parents' names and where he or she lives. Early childhood education helps children to

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communicate because when teaching the children, you also teach them listening skills before they can answer." Participant 15

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"Early childhood education is important. It can be done at home through reading and explaining things to children, but it is very rare for parents to read books for their children. The alternate is to introduce children to crèches so that they are exposed to early childhood." Participant 6

"Early childhood education is the thing that children learn when they are still young, this education can be done at preschool or crèche where children go to learn and play with other children. This is where children get more creative and learn to express themselves." Participant 19

"Early childhood development is the learning, growth and development that takes place from birth until grade R. It is very important because the rate of growth of the brain and the capacity to absorb information and build neurons is fastest from age zero to five." Participant 20

"Although it can be done at home, it is important to take children to centers where there are people who are trained to educate them." Participant 8

It was further indicated that it aims on educate children about toilet training, social skills and the norms and values of a particular society. Participants also indicated that early childhood education sharpens children's cognitive skills.

"Early childhood education aims at empowering children with knowledge through education that is inclusive and developmentally appropriate. The curriculum and activities must tally to allow children to learn." Participant 18

"Early childhood education is any kind of education given to children when they are still young. It can involve training them to use the toilet, use words, as well as to acquire social skills and many other things." Participant 25

"Early childhood education is any kind of education that can be given to children to sharpen their skills, that is both social and cognitive skills. It can be done by parents or by caregivers at day care centers." Participant 28

The study concluded that early childhood education is education which is given to children before they start school. It can be done either at home or day care centers. This education includes teaching them hygiene, social skills and rules of the society.

5.3.4.2 The importance of early childhood education on language development in children

The findings show that most children get early childhood education at daycare centers. The parents indicated that early childhood education is important to children and when it is done at day care centers, it gives parents time to do other chores that they have instead of sitting and educating their children.

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"It is important because children will find other people to play with and when you want to visit your relatives you are free to go without the children because they will be at crèche and, as mothers you will be free to do other things at home without disturbance." Participant 7

The study identified the following importance of early childhood education in children.

5.3.4.2.1 Children learn language fast

The findings show that children who are exposed to early childhood education at day care centers learn language at a very young age and that they learn many words within a short period of time. Parents indicated that they sometimes fail to share their time with their children, and this may hinder the development of the children's language. However, when they attend day care, they will be exposed to language more than they are at home.

"Early child education is important because it helps children to learn language fast and better. Sometimes we as mothers do not have time to sit and play with the children. This makes it difficult to find time to help our children to learn language because it hinders communication between mothers and their children. Children who attend day care center learn language better than those who do not attend." Participant 1

"Early childhood education is important for children. It helps children to learn language fast and they can learn language at an early age around 1 year 6 months. Such children learn more words at a very young age." Participant 3

"*Children who are exposed to early childhood education learn language faster than those who are not exposed to such an education."* Participant 6

"Children who are exposed to early education understand a lot of words than those that are not exposed to early education." Participant 17

5.3.4.2.2 Exposure of children to other children

The findings also reveal that early childhood education exposes children to other children and this, in turn, fosters the development of language. As shown earlier in the study, environmental factors, such as the availability of other children fosters language development and helps children to learn language fast. Exposing children to other children was also said to be vital in helping children learn social skills such as playing with others and communicating properly with other people.

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"Early childhood education helps children with interaction–learning. Children learn more when they are interacting with others. Through play, language development happens faster than when a child is alone. The child learns from others and teachers, and the teacher will also be there to model the correct pronunciation, and this is advantageous to children. Vocabulary expands when children are part of early childhood education because as the children engage, they get a lot of exposure to different words spoken by different people." Participant 18

"Although early education can be done at home, it is mostly done at day care centers, which helps expose children to other children. It is easy for children to learn things when they are in groups than individually. The exposure of a child to other children fosters social skills such as playing with other children and communicating in an effective way with other children. When children are playing with other children, they learn language very fast" Participant 24

"If children are exposed to such education at day care centers, it exposes them to other children, and this fosters their development of language." Participant 21

5.3.4.2.3 Exposure of children to language stimulating environment and full-time caregivers

Exposing children to early childhood education at day care centers was also seen as a way of exposing children to a language fostering environment as well as to full time educators who are dedicated to teaching children language and other things. Parents also indicated that, at day care centers, children are exposed to several tools that can sharpen their language than they are at home.

"Early childhood education is important for children. It can be in the form of attending a crèche, and such children learn language easily and fast. This is because they spend many hours with other children and also because they have caregivers who are there to help them to talk. At crèches, there are more toys than at home. Children are more exposed to things that foster language than they are at home, things like books and chats." Participant 4

"Early childhood education is important. Since most parents are working, it is important for children to be introduced to childhood education by caregivers. Early childhood helps children to learn language while they are still young. It exposes them to people who are dedicated full time to helping them to acquire language. Early childhood helps children to acquire more words than those that are not exposed to early childhood." Participant 5

"Early childhood development is very important. Studies show that children who are exposed to childhood education appear to be more intelligent than those who are not exposed to such an education. However, these children are not really intelligent, but they are exposed to a lot of things. Exposure makes them to appear intelligent. This exposure could be to animals' pictures or in the books." Participant 11

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5.3.4.2.4 Providing children with social skills

Results show that early childhood education helps to educate children with social skills and basic things that are important for their survival. Participants also indicated that it helps children to know about their surroundings as well as about the norms and the rules of the community.

"Early childhood education is important to children. It helps children to learn a lot of things. If children know languages, it become easy to teach them other skills such as toilet training and mealtimes. It also helps mothers to see if the children have language related disorders." Participant 9

"*Early childhood education is important because children get to learn the basic things in life; It helps the children to understand who they are. It also helps because, as parents, you will be able to see if your children are developing well.*" Participant 19

"Early childhood education helps children to know their surroundings, the norms and rules of a particular culture and the gender-related skills they need to know." Participant 25

"*Early childhood education provides children with both social and cognitive skills. It is through this education that children learn how to talk to each other, how to play with others and how to look after themselves.*" Participant 28

5.3.4.2.5 Providing children with knowledge

The findings show that early childhood education aims at educating children on many things that they require for survival. Participants indicated that it helps children to acquire knowledge about things that are harmful to their health and to know different ways of living with other people.

"Early childhood education activates the brain of a child unlike those that are not exposed to early childhood education. When a child who is not exposed to early education sees a scorpion, she will shout to her/his mom to come and see the insect, but the one who is exposed to early education will know that it is a scorpion." Participant 11

"Early childhood education teaches children about things that are harmful to them. It teaches them how to communicate with adults and how to respond to adults. It also teaches children how to play with others." Participant 22

"Early childhood education is crucial for children's language development because it helps children to understand different types of activities, learn new words and how to use them, learn writing skills as well as learn the alphabet and listen to stories." Participant 23

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In addition to gaining knowledge, participants also indicated that early childhood education helps children to learn about the norms and values of their society. The findings show that early childhood is used to pass cultural values from one generation to the other.

"Early childhood education helps children to learn different things, such as norms and values. It also helps children to understand language better." Participant 17

"Early childhood education is the education that aims to equip children with the things they need to know regarding their culture, themselves, and their surroundings. It includes knowledge about things that are harmful to them, rules and norms." Participant 24

"It is through childhood education that children learn the customs and norms of a specific culture such as values and norms. These are passed from one generation to the other through language." Participant 28

"They learn norms, social skills, and customs or values of their culture. However, such education can be passed to them by parents." Participant 29

5.3.4.2.6 Introducing children to the learning environment

Lastly, the results show that early childhood education introduces children to the learning environment. The findings show that early childhood education trains children to be comfortable with the learning environment.

"I strongly support early childhood education (i.e. crèche). I think it is the foundation of good education because children are equipped with proper skills before they start with primary school. It helps children to be more sociable and comfortable with the learning environment." Participant 10

"The main purpose of early childhood education is to prepare children for their transition to school. It introduces them to school procedures. However, it does not fully expose them to the school setting, but it gives them instructions." Participant 29

"Early childhood education in preschools and day care centers is important. This education helps to prepare children for the primary school setting. It helps them to learn norms and how to play with adults as well as how to behave in the presence of old people. Early education also includes educating children about language and how they can use language." Participant 30

Based on the above statements from the participants, the researcher can, therefore, conclude that early childhood education is important for children because it provides children with knowledge and introduces them to the learning environment. The majority of participants indicated that they prefer day care centers to give such an education to their children because it helps

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children to learn language fast. It exposes children to other children and to language stimulating things and full-time caregivers.

5.3.5 Theme 5: Language disorders that are associated with language development in children

The findings of this study show that there are several disorders and speech disorders that children may suffer from during the development of language. The study also shows that there are also child psychological disorders that affect the development of language in children and, lastly, participants indicated that there are also several conditions that may affect the development of language.

5.3.5.1 Definition of language disorder

Participants defined language disorder as the inability of a child to communicate or to use language. They further indicated that language disorders result in problems pertaining to vocabulary and to construction of sentences. Participants further indicated that, sometimes, language disorder has to do with the child's inability to understand spoken language.

"A language disorder refers to a child's inability to speak or hear language." Participant 11

"A language disorder is an impairment that makes it hard for someone to find the right words and or to use clear sentences when speaking." Participant 14

"A *language disorder is a condition in which a child has lower than normal ability in the usage of language, form, function and difficulties with regard to vocabulary or saying complex sentences and remembering words.*" Participant 18

"A language disorder is when someone has difficulties understanding what other people are saying or when someone is unable to find the right words when speaking." Participant 23

Although the majority of participants were able to show their knowledge of language disorder, some of the participants indicated that they do not know about language disorders.

"I don't know about language disorders." Participant 15

"I don't have much knowledge on language disorders, but I have seen children stuttering. Some are affected by epilepsy, while others are slow in their language development. Some are shy. I think general practitioners, clinics, hospitals and schools should refer such children to specialists or Speech Therapy." Participant 21

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"I don't know about language disorders and I don't know what I will do if a child is failing to talk. I just believe that as time goes on, the child will talk. What you should understand is that children do not learn language at the same pace. Some children are slow learners and they learn language very slowly. However, they end up learning to communicate, only that it just takes time." Participant 1

5.3.5.2 Disorders that are related to language development in children

The language disorders that the study identified include expressive language disorder, dyslexia, articulation disorder, inability to understand spoken language, receptive disorder, and receptive language disorder.

5.3.5.2.1 Expressive language disorder

The findings show that children with expressive language disorder have challenges with thoughts and expressing their ideas expression. Participants indicated that such children know and understand language but are unable to use words that they know to express themselves.

"We have language disorders and speech disorders. Language disorders include expressive language disorders. This is when a child fails to express himself but knows what he wants to say. These children can hear everything that you are saying, follow all the instructions but cannot express themselves." Participant 11

"Expressive language disorder is a disorder in which a child experiences difficulty with expressing thoughts and ideas." Participant 22

"There are disorders of expression; such children fail to express themselves. Even when they try to speak, it is impossible for a listener to get the meaning of their statement." Participant 28

5.3.5.2.2 Dyslexia

The study showed that dyslexia is a language disorder in which children have difficulties explaining symbols, and pictures. The findings show that when these children start primary school, they experience difficulties with understanding written words and they are unable to read. Participants indicated that such children are able to communicate and use words properly. The only problem they have is explaining written language.

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"There are those who cannot explain symbols. We say they have dyslexia. These children have problems with spoken and written language. At school, they will write things that are meaningless, however, they perform well in mathematics." Participant 11

"There is also dyslexia. This is an inability to learn to read, interpret words (written or spoken words), read letters and symbols. However, these children are often intelligent and there is nothing wrong with them. They can use language effectively but will have problems in explaining symbols or pictures." Participant 28

5.7.2.3 Receptive language disorder

Inability to understand spoken language was also indicated as one of the language disorders that affects children. Children with this disorder are unable to understand spoken language. The study further indicates that this disorder usually happens as a result of other medical conditions.

"Then, we have those that are unable to understanding the spoken language. This is when a child can hear what you are saying but does not understand what you mean." Participant 11

"The language disorder that I know is the receptive language disorder which is a difficulty in understanding what others are saying." Participant 23

"Some children suffer from receptive language disorder. Receptive language happens to children who are suffering from certain medical conditions such as strokes. Receptive language is the inability of the child to listen and understand communication. Even if they will hear the words you are saying, it is difficult for them to understand what you are trying to communicate to them." Participant 28

5.3.5.3 Speech disorder associated with language development in children

Besides language disorders, the findings show that there are also speech disorders. Speech disorders were identified as a problem that affects the speech of children.

5.3.5.3.1 Lisps

A lisp is a speech disorder that affects the pronunciation of certain words. The findings show that children who have this disorder have a problem pronouncing words that have the letters "R" and "S". As a result, it is difficult to hear what the children would be saying. Participants also indicated that this speech disorder may be inherited.

"I know lisps. This is when children fail to pronounce words clearly. They bite their tongue when talking and such children take time to learn language. They will know the words and their usage,

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but it is difficult for them to say those words in such a way that a stranger would hear what they are trying to communicate." Participant 4

"I know lisps. This is when a child fails to produce some words, especially words with the letter "s". When they try to produce such words, they bite their tongues. When children who suffer from such problem grow up, these disorders might disappear. Children with lisps are easy to hear; the more you spend time with them, the more you learn how they produce words. This makes it easy to understand them." Participant 5

"I know lisps. A lisp is one of the disorders that most of children experience as they are learning language. Most children are born with this disorder and some inherit it from the parents. As they grow up, lisps might fade with time. However, when these children speak, you can tell that they once suffered from a lisp disorder." Participant 6

"My first born suffered from this speech disorder (malimi). He was unable to produce the letter "r". Even when he went to crèche, he still had this disorder and it was very difficult for the teacher to hear what he was trying to say. I tried several times to help him to pronounce the words, but I eventually gave up and accepted that he will not be able to say the letter "r". However, that disorder faded when my child started grade R." Participant 9

5.3.5.3.2 Stuttering

Stuttering is defined as a speech disorder in which children repeat either letters or words when they are talking. The findings show that, because of repeating words and letters, it takes time for such children to communicate a sentence. Participants also suggested that when communicating with those children, one should be patient with them.

"There is also stuttering. Children who stutter know the words but when they are talking, sometimes, they forget the word, or they may repeat one word or sound in a sentence. Their sentences are not clear. For example, when they want to say Mpho they will say Mmmmmmmmmpho. The child knows the word but pronouncing it is difficult for him/her." Participant 4

"The other disorder I know is stuttering. When children who stutter produce words, they repeat them or specific letters in the words. For example, they can repeat the letter "l" several times before they say what they want to say. Children with this disorder need a caregiver who is patient. If you are not patient with them, you will not understand what they are trying to communicate because they take a long time to say one thing or one sentence." Participant 5

"Another disorder is stuttering. When you are talking to children who stutter, you should be patient with them because they spend a lot of time trying to say one word or sentence. If you are rude to or harsh with such child, they will fail to say whatever they want to say. But if you become patient with them, you get used to them and are able to say whatever they want to say." Participant 6

"Then we have speech disorders, which include children who cannot speak because of stuttering. They do not speak things that are fluent. They repeat words several times before they can say

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what they want to say. They develop language but the problem is when they are talking." Participant 11

5.3.5.4 Psychological disorders that affect language development in children

The study was also able to identify two psychological disorders that may affect the development of language in children, namely mental retardation and autistic disorder.

5.3.5.4.1 Mental retardation

The findings indicated that children who suffer from mental retardation also suffer from language development problems.

"*In some children, illnesses such as mental retardation, make it difficult for those children to learn language with ease.*" Participant 13

"We also have different psychological disorders that may lead to difficulties or delays in the development of language. Disorders such as mental retardation." Participant 28

5.3.5.4.2 Autism

Another psychological disorder that the study identified is autistic disorder. Participants indicated that children with autistic disorders also experience challenges when they learn language.

"Autistic children are the ones who suffer from language development disorders. For such children, it is important that parents try to develop their language well for the sake of their cognitive development." Participant 12

"Even children who suffer from autism, that is autistic disorder, find it difficult to learn language." Participant 28

5.3.5.5 Conditions that affect language development in children

The findings reveal that there are other conditions that affect the development of children's language. These conditions include medical conditions such as cerebral palsy, malnutrition, physical abuse and low Apgar scores.

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5.3.5.5.1 Cerebral palsy

The findings show that children with cerebral palsy experience challenges in their overall development, including their development of language.

"What I know is that there are children who have difficulties in learning because of illnesses such as cerebral palsy. If you have a child with such an illness, it is important to train the child to use sign language so that he/she can communicate what she wants through pointing." Participant 4

"Disorder like cerebral palsy also affects the development of language. Children who suffer from cerebral palsy also suffer from a number of things that affect their general development. It is difficult for such children to learn language." Participant 26

"I also talk of medical conditions such as cerebral palsy. It also affects the development of a child, including the language of the child." Participant 29

5.3.5.5.2 Physical Abuse

Ill-treatment, such as child abuse, was also identified as a factor that affects the development of language in children. The study showed that when children are physically abused, they stop communicating with others, hence it is difficult for them to learn language. Participants also indicated that when children grow up in an abusive environment, they isolate themselves resulting in a lack of communication.

"Physical abuse may make a child mute. Children who are physically abused tend to withdraw from talking and that affects their full development of language." Participant 13

"Abuse lessens the reinforcement and encouragement that should be given to a child. Abusive parents do not have time to give encouragement to the child when the child is trying to communicate. Because of being abused, children may be isolated, and this will make it difficult for them to use language. Some children even become mute and are no longer able to communicate with others" Participant 29

5.3.5.5.3 Low Apgar scores

The findings also indicate that children who are born with low Apgar scores experience problems with language development.

"A low Apgar score is an assessment of a baby at birth. This assessment helps to determine if the baby is ready to survive without medical assistance. Children who are born with low Apgar

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scores usually have problems with the development of language when they start to learn it. They need more time and patience than those that score high in Apgar scores." Participant 26

"Low Apgar scores are those scores that are taken just after the birth of a child. These scores predict the development of a child. Children who get low scores usually have problems and delays in their development of language." Participant 29

"Low Apgar also indicates that the child might suffer from language disorders or delays in the development of language." Participant 30

5.3.5.5.4 Malnutrition

Malnutrition was also identified as a factor in lessening the development of children's language. The study shows that malnutrition affects the overall development of a child.

"Malnutrition affect a number of developments in children including the development of language." Participant 26

"Malnutrition affects the overall development of children. This includes language communication. Children who suffer from malnutrition are more likely to have delays in their development of language." Participant 29

1.3.5.6 Treatment of language disorders in children

The findings show that language disorders can be treated. The treatment can be found in hospitals and it is done by speech therapist. The study indicates that the treatment involves both speech therapists and parents.

"Treatment is done by Speech therapists. If the problem is detected early, there could be improvements. Psychotherapists can be consulted for counselling and Hospital consultation and a speech therapist can be consulted." Participant 18.

"Treatment can be administered by parents. They can do so by involving themselves and setting aside time to help children learn language. They might also expose the children to other children who already know language." Participant 26

"The family must check with language therapists if the child is unable to communicate more especially at the age of three years. Parents should also read stories to such children. They should also search for programmers that can be used to foster language development. For treatment, I suggest that the child should be taken to a speech therapist." Participant 18

The findings show that the treatment of language disorders is done through the involvement of behaviour therapy that will focus on reinforcing words that children may try to vocalise and other

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activities that foster the development of language. The aim of reinforcing such words is to sharpen their vocabulary and to encourage the pronunciation of words.

"Often, the most effective method to treat language disorders in children involves using Behaviour Therapy. It entails reinforcement of the desired behaviours through rewards, and discouraging undesirable behaviours using punishment. Parents/caretakers may consult with a doctor, who will be able to rule out physical causes of the disorders and refer to relevant professionals. They may also consult a psychologist who will diagnose and refer the child to relevant professionals such as Speech Therapists or Occupational Therapists. Alternatively, parents may also consult a Speech Therapist or an Occupational Therapist directly." Participant 20

"The primary objective of treatment for a speech and language disorder is to foster and sharpen the communication of a child. Therapy can also be used to minimize the disorders. Early surgical management for clefts of the lips are important. For treatment, children can be taken to speech and language therapists as well as to children's hospitals, paediatric hospitals, and the Boston children's home" Participant 26

"When children are experiencing language delays, they might be exposed to therapy which will help them to learn language. Such therapy is given by speech therapists. We have a number of activities and programs that aim at developing the language of a child and the therapy requires the presence of both the child and the parent or caregiver because they are all important in the development of language in children." Participant 29

The study concluded that there are several conditions that affect the development of language in children. Language disorders were also identified as factors that delay the development of language in children. Nevertheless, the study showed that mothers and caregivers lack knowledge on language disorders and treatment of language disorders. Only a few mothers are aware of language disorders and their treatment. The majority of caregivers and some mothers, however, understand speech disorders.

5.4 Conclusion

This chapter presented the results of the study. The findings show that language helps children to communicate their needs and wants. It further shows that language development also stimulates children's cognitive development. However, children who do not develop language suffer from isolation, loneliness, low self-esteem and self-destructive behaviour. Several activities aimed at stimulating language were presented and those activities depend on the age of the child. This chapter also presented the disorders that are associated with language development and the treatment of those disorders. The next chapter discuss the findings of the study.

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CHAPTER 6: DISCUSSION OF THE FINDINGS

6.1 Introduction

This chapter discusses the findings of the study. The findings include the following: demographic information, the importance of language development in children, activities that influence language development in children, home factors that influence language development in children, early childhood education on language development and language disorders that are associated with language development in children.

6.2 Demographic information

Thirty participants were sampled to participate in the study. The sample consisted of 15 mothers/caregivers, five daycare teachers, five psychologists and five speech therapists. The study comprised of people with different levels of education. Two participants were illiterate, one had primary education, nine had secondary education and 18 had tertiary education. The age of the participants ranged from 29 to 61.

There are several factors that affect the development of language in children and these include the age of the parent, gender of the parent raising the child, level of education of the parent and the socio-economic status of the family. Lacroix (2017) argues that women spend most of their time with children compared to men and because of this, children raised by mothers develop language earlier than those raised by their fathers. Women are also more compelled to foster language development in children compared to men. Besides the gender of the parent or caregiver, the education and age of the parents also have an impact on the development of language. Findings of a study conducted by Muluk, Bayoglu and Anlar (2014) on factors that affect 'language development in 3 to 6 years old children', found that children whose mothers had high school education were able to explain words better than children raised by parents with a primary school education or those who are illiterate. A study conducted by Oxford and Spieker (2006) on preschool language development among children of adolescent mothers, found that children of adolescent mothers show poor language development compared to children of older mothers.

Studies show that there is a relationship between socioeconomic status and cognitive development (Feinstein, 2003; Tulking & Kagan, 1972). Children from lower socioeconomic status

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language as a means of communication, which always takes place within a social context. According to Yule (2006), language is a symbol that is used to convey meanings and can be used to generate an infinite variety of messages.

The findings also reveal that language can be in the form of spoken words, written words and gestures. According to Nordquist (2017), language is communication that uses signs, voice sounds, gestures and symbols. Peng (2005) also indicates that language is a behaviour which uses body parts such as the vocal apparatus, auditory system for oral language, the brachial apparatus and the visual system for sign language. He further argues that these body parts are controlled by the brain. The findings also reveal that language is used to connect children to their families and to express people's feelings. In addition, Goldstein (2008) who points out that language is a system of communication which uses both words and sounds and enables people to express their feelings, thoughts, ideas and experiences. This observation was also made by Gooden and Kearns (2013) who argued that language also helps children to understand and express their thoughts and feelings, to share meanings with others and to participate in cultural activities. Language is an instrument for learning. Children learn through what they hear from their parents, caregivers and peers (Gooden & Kearns, 2013; Parker, 2015). The researcher concludes that language is a crucial tool of communication which enables children to get their needs, to express themselves and to adjust socially to other people. This conclusion is in support with the universal learning theory that indicate that children learn language though evaluating its importance.

6.4 Language development in children

The findings of the current study indicate that language development in children is of great importance. The findings show that language development takes place from birth to three years and that this period is very important. These findings are in line with those of Erikson in Meyer et al. (2008) who state that these early years of life have an important influence on later development. The first three years of life, which are the years of language acquisition, are believed to be a sensitive period in biological and social development (Bornstein, 1989). The findings reveal that children's early language development makes an important contribution to the children's performance when they enter pre-school. Children's understanding, use of vocabulary and their use of two-three-word sentences at 24 months are strongly associated with their later performance. Roulstone, et al. (2011) argue that children's language adds value to their

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development irrespective of their social background. Failure to learn a language at an early stage may affect children's learning during pre-school years.

6.4.1 The importance of language development in children

The study confirmed that language development in children is important. It revealed that there are several benefits that come with the development of language in children. Social cognitive theory indicated that the benefit that comes with language are the reasons that motivates children to learn language. The results of the current study concur with those of Gooden and Kearns (2013) who found that the development of language in children is one of the most important major development tasks in children. They argue that language is a key for children to interact with the world and to understand their surroundings. The findings of the current study further emphasize that language development in children includes gaining the skills to understand and to express thoughts, feelings, and information. The following section discusses some of the reasons why language is important in children.

6.4.1.1 Social communication and marking friends

The findings of this study show that language is important for communication. Most participants indicated that language helps children to communicate with their relatives, friends and caregivers. Moreover, participants also indicated that children also use language for other social aspects such as making friends with others, socialization, playing with friends and also adjusting to the community at large. Newcombe (1996) similarly indicates that language helps children to establish and maintain relationships with their friends and relatives. Communication is the foundation of both relationships and friendships. It is important for children to acquire language skills, as it helps them to relate with their parents and peers, to interact with others and to get their needs (Brannagan, 2015). Changnon (2017) highlights that when children grow, they become more and more interested in playing and interacting with other children. When they are playing with others, children use language to communicate ideas and to comment during a conversation (Louw, et al. 1998), which, in turn, helps them to adjust and fit in social situations (Burman, 1994). Lastly, Newcombe (1996) indicates that language also helps children to establish and maintain relationships. Relationships and friendships start through communicating with others. Children play and make friends though communication. The researcher concurs that when children are playing, they use language, which allows them to adjust socially to other people using language.

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These findings are guided by the social cognitive learning theory which indicates that language is stimulated by social interaction.

6.4.1.2 Educational purpose

Language was explained as a way of conveying knowledge from one person to the other. Furthermore, participants indicated that language can be used to educate children about many things that they need to know. Education can be given to children at home or at school. Participants indicated that language is used at home and at day care centers to educate children about the norms and customs of a community. The findings of a study conducted by Law, Rush, Clegg and Peters (2010) in which they investigated the role of language in children's early educational outcomes, revealed that children's understanding, use of vocabulary and their use of two-three-word sentences at 24 months is strongly associated with their performance at school and how they adjust to their social class.

A study conducted by The Children Communication Charity in 2013, indicated that a child who is unable to use language skills experiences difficulties in class and in learning new things in life since language is used to transfer information from teachers to children. In addition, in a study titled "The importance of speech, language and communication at primary schools" conducted by The Children Communication Charity (2013) in areas that are socially disadvantaged in the UK, it was found out that more than 50% of the children starting school had a problem of delayed language skills. The results showed that delayed language development affects the ability to learn, achieve and make friends. Gooden and Kearns (2013) and Parker (2015) asserted that language is an instrument for learning in which children learn through what they hear from their parents, caregivers and peers. The researcher concluded that children's language adds value to their development and education irrespective of their social background.

6.4.1.3 Communicating needs and wants

Another essential aspect of language is that it helps children communicate their needs and wants. The study revealed that children who can communicate are able to tell their parents and caregivers the things they need. Some parents indicated that, because of work overload at home, they sometimes forget to give the children things such as water. However, they indicated that when children can communicate, they can request for water. The above findings are in line with

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Zedana, Kadir, Yusofc, Yusoffd, Sirene, Mohamedf and Toureg's (2013) which indicated that language is a set of specific means and that it takes place in society for people to express their needs through speech or writing. The development of language in children is crucial to increasing their ability to successfully express their needs and desires (Owens in Popich, 2003). Equally important, is the current study findings which show that children who can communicate are able to describe the things they need and to explain how they are feeling.

6.4.1.4 Expression of feelings

Expression of feelings was also explained as an important aspect of language in children. The findings show that children use language to express their feelings. In addition, parents indicated that when children can express how they feel, it gives them (parents) an opportunity to respond to children appropriately. Language is a crucial tool of communication which helps children to understand and express their thoughts and feelings, to share meanings with others and to participate in cultural activities (Gooden & Kearns, 2013; Parker, 2015). Swartz, et al. (2011) also concur that children, just like adults, use language to express thoughts and feelings.

6.4.1.5 Understanding the world

Language helps children to know and understand their surroundings. It is through language that children learn about different objects and how those objects are utilized. Similarly, Louw, et al. (1998) argue that language is used to classify and group things, such as animals, meaning that children use language to classify objects in their surroundings. Essays UK (2013) indicate that language helps children to make sense of the world around them and to develop the ability to speak, to listen, to read, to write and to solve problems. Culture forms part of our surroundings and language is a fundamental aspect of culture. It is the tool that carries traditions and values related to group identity. Children acquire self-awareness, culture and a knowledge of their surroundings through communication (Sirbu, 2015). Zedana, et al. (2013) argue that language can develop human knowledge and extend that knowledge for the benefit of humankind. The study concludes that language development is an important development that children require. Children who can use language are also able to make friends, learn things, communicate their needs and wants, express their feelings and understand their surroundings.

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6.4.1.6 Cognitive development

The study shows that the development of language also activates cognitive development. Participants indicated that, while children are learning language, they are also sharpening their reasoning, thinking and problem-solving skills. In addition, participants also indicated that cognitive development reduces problems such as poor language development, low self-esteem and isolation. The following section discusses some aspects of cognitive development that take place during language development.

Thinking and stimulating reasoning capacity

Participants indicated that the development of language stimulates the thinking and reasoning capacity of a child. They further indicated that before children respond to questions, they think about how to respond to that question showing that they will be stimulating their reasoning capacity. Similarly, Samuelsson and Kaga (2008) argue that, to stimulate children's reasoning capacities, children should be encouraged to reason and think through discussions about familiar food products, clothes, toys and advertisements. Such discussions can be stretched to integrate children's thoughts in less materially rich circumstances and to stimulate conversations about solidarity and co-operation.

Problem solving

Language is also important for solving problems. Participants indicated that when children are playing, they also fight for different things such as toys. When fighting, they use language to resolve their conflicts. Participants also indicated that parents should teach children to apologize to each other whenever there is a conflict among them. This will help them learn to solve problems in appropriate ways. Similarly, Essays UK (2013) indicated that language helps children to develop the ability to speak, to listen, to read and to write to solve problems. In addition, Oddo and Castleberry (2013) assert that several types of play and games expose children to problem-solving skills in a safe and caring environment.

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6.4.2 Challenges faced by children when they do not develop language well

The findings of this study found that children who do not develop language skills face several challenges such as loneliness and isolation, inability to learn, discrimination by other children, failure to express themselves and a low self-esteem. These children may also show self-destructive behaviour. In conclusion, the researcher asserts that language development in children is important since it stimulates other cognitive skills which children require for their social interaction and adjustment to their peers and the community. The following are the challenges faced by children when they did not develop language well:

6.4.2.1 Loneliness and isolation

Inability to use language may result in isolation and loneliness for a child. Participants indicated that when children are unable to communicate with other children, they usually play alone. This makes it difficult for them to make long term friendships. The study also revealed that loneliness and isolation may result due to discrimination by those that are able to communicate, or it can be used as a coping strategy to avoid being bullied by others. In addition, participants also state that the more the children isolate themselves from those that can communicate, the more difficult it becomes for them to learn language. Language turns the wheels of human socialization and social interaction. Similarly, Catts, Fey, Tomblin and Zhang (2002) argue that children who are able to communicate with other children are easily accepted into a group. It is easy for them to form friendships with their peers, and to interact appropriately with other children.

In contrast, children who are unable to use language or are diagnosed with a language disorder are unable to make friends, participate in group play, activities and they are likely to be alone and not enjoy the company of others (Sundheimand & Voeller in Spiliotopoulou, 2009). Sundheimand and Voeller (in Spiliotopoulou, 2009) add that those children may also display behavioral problems as a way of communicating with others and this may push others away from them. Furthermore, their difficulties in expressing themselves may make them aggressive towards others or distracted and socially withdrawn (Spiliotopoulou, 2009). The researcher concluded that children with language disorders also suffer from other disorders such as anti-social disorders. They are unable to adjust to their peers and suffer from isolation and loneliness.

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6.4.2.2 Inability to learn

Language is also important for educational purposes. Children who do not develop language experience problems in acquiring learning skills. The study discovered that children who are unable to learn language are unable to learn norms and customs of society, as well as children's games. Language skills strengthen all human interaction and language is a valuable tool for learning. Therefore, language is crucial to children's success in school and society. As a result, language problems impact negatively on the child's ability to read, write, and interact with others. This, in turn, makes it difficult for such children to learn either at school or at home.

Similarly, Catts, et al. (2002) argue that children with early language impairment have a significantly higher risk of reading disabilities later in life. Spiliotopoulou (2009) observed that some children with language development problems also have learning and reading disabilities more especially during their early school years. Simms (2007) also highlighted that children who lack phonologic awareness and understanding of words (e.g. who cannot complete rhymes) are at risk for later reading problems. The researcher concludes that there is a relationship between early language development and the child's ability to learn either at home or at school.

6.4.2.3 Discrimination

The study discovered that children who are unable to use language suffer from discrimination from those that can communicate. Discrimination may result in the child being laughed at by those that are able to communicate or in the child reacting in a hostile manner towards those that are able to communicate. Participants indicated that children who are unable to communicate are usually hostile when they are playing with other children. Willinger, Brunner, Diendorfer-Radner, Sams, Sirsch and Eisenwort, (2003) also found that children with communication problems are at risk of being rejected by other children. These children have difficulties interacting with their peers because of their language impairment and they may be in danger of social rejection and discrimination. The researcher concludes that this social discrimination may reduce the children's exposure to language and minimize their opportunities to exercise and refine conversational skills.

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6.4.2.4 Failure to express oneself

The ability to express one's feelings was identified by participants as an important factor of language development. The study discovered that children who are unable to communicate experience problems with self-expression. They are unable to express their views when they are with others. Their failure to use language leads to miscommunication which might cause frustration and anger. Spiliotopoulou (2009) also found that children who are unable to use language experience problems of expressing themselves and this may lead to behavioural problems. Some parents, in a study done by Spiliotopoulou (2009), reported constant conflict with their children and noncompliance by the latter. They believed that these behaviuoral problems were caused by the frustration that the children felt because of their inability to express themselves. Disorders in language development may lead to an inability to express oneself; serious emotional problems arise from the children's inability to express themselves or to comprehend others appropriately (Herbert, 1998).

6.4.2.5 Low self esteem

The study revealed that one of the challenges faced by children who are unable to use language is a low self-esteem. Participants indicated that a low self-esteem develops due to feelings of inferiority when they compare themselves to those that are able to communicate. They further indicated that these children may also develop low confidence in themselves since they cannot communicate with others. Some scholars also observed that some children with language problems may have learning and reading disabilities early in their school years (Catts, et al., 2002), suffer from discrimination (Willinger, et al., 2003), and failure to express themselves (Herbert, 1998). This may result in them repeating lower grades or developing feelings of rejection or believing that they are failures leading to a low self-esteem (Spiliotopoulou, 2009). Similarly, Dicken (2007) argues that language problems can result in poor self-confidence and a low self-esteem, which can affect personal and social relationships.

6.4.2.6 Self-destructive behaviour

Some of the participants in the current study indicated that children who are unable to communicate may display self-destructive behaviours. This may arise because of their failure to express themselves and their needs. Language usage difficulties put a child at risk not only

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educationally but also emotionally (Cross, 1998), such as showing behavior problems as their way of communicating with others (Spiliotopoulou, 2009). In a study conducted by Willinger, et al. (2003) on behaviour in children with language development disorders, participants reported that 50% of the children with language problems showed behavioural problems in comparison with 12% of the children without language problems. In addition, Johnson and Beitchman (2005), reported that children who are unable to use language also exhibit other disorders such as mood and behavior disorders, depression, anxiety disorder, attention deficit/hyperactivity disorder (ADHD), conduct disorder (CD), or oppositional defiant disorder (ODD).

In contrast to the findings of this study, Coster, Goorhuis-Brouwer, Nakken, Spelberg (in Willinger, et al., 2003) found that children with specific language impairments did not demonstrate more behaviour problems than children without language problems. However, the results of the current study do not confirm this finding. Instead findings show that children with language usage problems exhibit destructive behaviours. In general, the results of the current study are in line with several studies that report that children with language disorders are at special risk of developing behavioural problems. The researcher asserts that delays in language development disadvantage children in many ways. It affects children in several ways, both socially (e.g. discrimination by others, inability to learn, and failure to express themselves) and psychologically (loneliness, isolation, lack of self-esteem and self-destructive behaviour).

6.5 Activities that influence language development in children

The findings of the study show that there are several activities that can be used by caregivers and parents to foster the development of language in children. All activities that helped children with language development also stimulated the cognitive abilities of the children. This means that the development of language also stimulates cognitive development. This theme was guided by the universal theory, which indicated that children are born with LAD, however it should be filled with words of a certain language. The following are the activities that can be used to fill the LAD. The study discovered two categories of activities that can be used to foster language development, and these depend on the age of the child. The two categories are discussed next.

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6.5.1 Activities that influence language development in children below the age of one year

The study discovered that activities which influence language development depend on the age of the child. The next section discusses activities that can be used to foster the language of children who are less than one-year old.

6.5.1.1 Communication with the child

The findings of this study indicate that communication is the most valuable tool that should be used by parents to foster the development of their children's language. The study reveals that it is important for parents to communicate with their children to expose them to language. The study also reveals that children learn words that they are exposed to on a daily basis. The above finding is in line with the findings of Hamilton, Plunkett and Schafe (2000) who, in their study titled "Infant vocabulary development assessed with a British communicative development inventory", discovered that the number of words that the child is exposed to influences the rate at which that child learns such words and increases the child's vocabulary list. According to Oddo and Castleberry (2013), repetition of words when communicating with a child is important. They further indicated that, although repeating the same word may appear boring or unproductive to adults, it serves to refine, influence, expose and stabilize language skills for children.

Therefore, children should be exposed to repetition routines, actions, and words, particularly those they enjoy. Repetition of words or phrases also helps to build children's vocabulary and expressive language, which Chomsky see it as a way to activate the LAD. Most participants indicated that language facilitation should start as soon as children are born. When parents are communicating with children from birth, it familiarizes children with words and sounds of a language. Nevertheless, some participants indicated that communication with the child should start during pregnancy. This would help parents introduce children to language before they are born. The study concludes that communication is the best and most used tool to stimulate language development. the findings are in line with Vygotsky, who believe that children learn language through social interaction.

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6.5.1.2 Non- syllables and child lead

The findings of this study show that it is important for parents to engage in non-syllables. Non-syllables refer to the bubbling sounds that parents repeat when a child is producing sounds (Frye, 2017). Participants indicated that non-syllables encourage children to engage in conversation. Similarly, Alston and James-Roberts (2005) found that children who are engaged in non-syllables learn language faster that those that are not. The findings of this study state that parents who play with their children and repeat the sounds made by the children influence the language development of their children more than those who do not do non-syllables. O'Grady (2005) argues that children start to produce sounds and babbles at around six months of age. Babbling provides children with an opportunity to experiment with and begin to gain control over their vocal apparatus, which is an important prerequisite for their later speech development. They further argue that children who are unable to babble for medical reasons can subsequently acquire normal pronunciation, but their speech development is significantly delayed. Babbling is usually followed by vocalization of the first words.

To encourage word vocalization, the study findings show that it is important for parents to practice child lead. Child lead is when parents repeat the words that the child tries to pronounce. When children start to move from non-syllables to words, parents should be there to repeat the words that the child will be trying to vocalize. This would give the child support to continue to vocalize words. However, the development of language in this situation will also depend on child self-regulation, as it is explained in the Social cognitive learning theory. Participants indicated that during child lead parents should listen to the words that the child is trying to pronounce to correct mistakes that the child would have made when pronouncing such words.

In contrast to this, speech therapists who were interviewed indicated that parents should not correct the mistakes that the children make when pronouncing words. However, parents should pronounce the word correctly rather than try to correct the child. Participants indicated that when parents keep on correcting the mistakes that children make during child lead, this result in children feeling that they are not competent. This, in turn, can lead to children discontinuing the act of pronouncing words. Similarly, Frye (2017) argues that parents are important in children's language development, and that they should restructure sentences for children instead of pointing out mistakes made by the children. Pointing out mistakes and completing sentences that children would have failed to complete could be embarrassing for the child.

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6.5.1.3 Nursery songs

Participants indicated that nursery songs can also be used to foster the development of language in children. Both parents and caregivers indicated that they use nursery songs to foster language. According to Mathews (2011), parents can influence child language development through signing nursery songs, reading books and walking with the child while touching and naming objects. The above findings are in line with Oddo and Castleberry's (2013), which revealed that singing songs is a fun, interactive way for young children to learn language. Nursery songs expose children to language through repetition and they create opportunities for turn taking.

To further stimulate the development of language, Pepper and Weltzman (2004) argue that singing songs can be accomplished by allowing a child to fill in key words in the songs. Singing the songs slowly to children and demonstrating actions can also be used to increase language acquisition in children. When music is paired with actions, it gives children the opportunity to develop both listening skills and motor skills. The words in nursery songs are simple and this makes it easy for children to learn and try to sing those songs because of the repetition. The findings also indicate that nursery songs have been used by different generations to foster the development of language in children. The study concludes that children learn through repetition of words. Listening to and singing the same songs repeatedly are encouraged to foster the development of language. Often, children begin to sing along once they have heard the same song several times. Therefore, repetition of songs can also be used to teach children unfamiliar words, add to their vocabulary list, and correct sentence structure (Oddo & Castleberry, 2013). More important, Iitus (2006) argues that frequent playing of games and hearing of nursery rhymes leads to early success in reading.

6.5.1.4 Pointing of objects

The findings reveal that parents and caregivers also point out and name objects to help children to know those objects. Participants indicated that when they want a child to give them something, they point to the object that they need and at the same time they call that object by its name. This helps the children to link the object and its name. Shulman and Capone (2010) also discovered that, through the process of pointing out and naming objects, children learn different things around them. Caregivers should also allow the child to point out and name familiar pictures in the book (Kennison, 2013). According to Mathews (2011), caregivers should name the object and

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encourage the child to imitate them. In addition to pointing to and naming objects, Santrock (2007) argues that recasting is also important. Recasting refers to rephrasing what the child has said. It can be done by turning a statement into a question. By recasting, parents give children an opportunity to communicate.

In contrast, Cornell, Senechal and Broda in Iltus, (2006), argue that there is no relationship between children pointing to objects or pictures and the children's power to recall words. However, Cornell, Senechal and Broda's in Iltus (2006) findings were concur to the findings of this current study in which most participants believed that pointing to objects fosters language development. The findings showed that the pointing method is the most used method in rural communities. Similarly, Butterworth (2003), Gravetter and Forzano (2003), and Volterra, Caselli, Capirci and Pizzuto (2005) concur that pointing to and naming of objects is the royal road to child language development. The researcher concluded that when pointing to objects goes together with naming those objects, it helps children to associate and link objects with their names.

Reading of books

Reading books can be used to stimulate the development of language in children. Books that should be used should have big colourful pictures to get the attention of the child. Oddo and Castleberry (2013) argue that parents should consider reading books with simple pictures and straightforward texts. Oddo and Castleberry (2013) further indicated that when parents repeatedly read books to children, the children will learn new words that are in that book. Similarly, Oddo and Castleberry (2013) argue that books are filled with opportunities to facilitate language skills in children. When parents reading same stories to children repeatedly, it develops the speech, language, and memory skills of the child, as well as increases the child's vocabulary, improves phonemic skills, and positive attitudes towards literacy. It is important for parents to read the same book to children repeatedly; this will help them to understand and learn words in the story. Slovenia, Umek, Fekonja, Kranjc and Muset (cited in Iltus, 2006) indicate that, in their study, children who were exposed to two selected books showed significant competencies in language development compared to children exposed to a variety of books.

Through repeated book reading, children can share in the reading, master vocabulary in the story, develop a sense of story sequence and begin to make predictions. In addition, Tamis-Lemonda and Rodriquez (2009) point out that children's familiarity with storybooks correlates with their

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receptive and expressive vocabularies and early reading abilities. In addition, reading books to children made it easy for children to succeed in their reading lessons at school.

6.5.1.5 The usage of sign language

The study discovered that sign language can be used to foster language development. Participants indicated that, when using sign language, it is important to also point or demonstrate the action, in order for children to understand the message being conveyed to them. Kapalková, Polišenská and Süssová (2015), in a study titled "The role of pictures as a support mechanism for novel learning, a training study with 2-year-old children" argue that gesture is closely linked to language development and can predict later lexical development. Similarly, in an experimental study done by Goodrich and Kam (2009) on co-speech gesture as input in verb learning, the use of gestures helped to facilitate verbal development. Capone and McGregor (in Kapalková, Polišenská and Süssová, 2015) also discovered that children learned more words when those words are accompanied by signs than children who are not exposed to sign language.

In a study done by Wilbourn and Sims (2013) they found that 26-month-old children learnt gestures as symbols of meaning when those gestures were presented simultaneously with auditory words. However, in contrast to the findings of this study, Puccini and Liszkowski (2012) showed that 15-month-old infants did not learn language through being introduced to gestures. Instead, those infants showed the best performance when a word was presented on its own and less performance when a word was accompanied by a gesture or signs. Although different studies came up with different points of view, regarding sign language, in the current study, sign language was found to be useful in helping children to develop language.

The study concludes that language development starts at infancy and that parents are the most crucial tool in stimulating the development of language. Activities, such as usage of sign language, nursery songs, reading of books, pointing to objects, usage of child lead and non-syllables and communication were important for stimulating the language of children who are less than one year old.

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Iltus (2002) highlights that when the children grow, parents should learn to interact with those children using books with big colourful pictures. Iltus (2006) further indicates that the most important thing is the interaction between parents and the children and not the content in the book. This means that even illiterate caregivers can use this activity to influence language development. They can do this by using their imagination and story-telling skills if provided with culturally appropriate picture books (Iltus, 2006). In addition, children from families without picture books develop language slowly compared to those from families with picture books. More importantly caregivers should use large colourful picture books, to gain the child's attention and concentration (American Speech-Language-Hearing Association, 2011). Lastly, Lonigan (in Louw, et al., 1998) stress that there is a positive relationship between reading books for younger children and their development of language and reading achievement later at preschool.

6.5.2.3 Explaining of meanings

The findings of this study indicate that parents should shift from pointing to pictures to explaining such objects as an activity to foster language development. The study shows that, to increase the children's vocabulary, parents should explain the usage of objects and meanings to children. Participants also argued that parents should show meanings of their actions. Similarly, Lao (2015) argued that naming of objects is a very effective technique for language development.

One participant in Lao's (2015) study titled "Infant language development" indicated that:

"When my son was an infant, I made it a point to teach him the names of the various parts of his body. On a day when we had free time, we would sometimes take more than 20 minutes to walk one block. The reason was that I would identify objects as we passed them and make sure my son knew their names. I would identify the sidewalk, cars, car tires, doors, windows, etc.... Then, on the way back I would quiz him to make sure he remembered the names".

According to American Speech-Language-Hearing Association (2011) showing meanings has to do with demonstrating the meaning behind simple words and gestures, for example, waving goodbye at the door when one is saying bye-bye. In addition, the current study findings show that it is important for participants to act according to the action or word. Findings also show that when waving goodbye, the person who is waving should leave, in order help the child link the word, action and meaning. Similarly, Mathews (2011) also argues that using actions to convey the

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to, it gives them time to express themselves. Similarly, Oddo and Castleberry (2013) argue that establishing successful turn-taking routines with children facilitates social and communicative skill development. They further indicate that turn taking can be promoted through play with children of any age. Popich (2003) adds that encouraging turn-taking is another way of stimulating language development.

During turn talking, caregivers are advised to allow for a brief pause when it is the child's turn so as to increase the child's initiation, communication and independence. In addition, Girolametto, Weitzman, Van Lieshout and Duff (2000) and Girolametto and Tannock (1994) state that parents should reduce the number of turns that they take to give the infant more opportunities to take a turn. Too much turn-taking control occurs when adults dominate the conversation by taking too many turns and this usually inhibits child participation and reduces the child's ability to learn language (Girolametto et al., 2000). Karmiloff and Karmiloff-Smith (2001) state that the turn talking that parents have with babies in the early months fosters the children's development of language at a later stage. According to Mclaughlin (2006), turn talking should start during baby feeding to encourage the child to eat and communicate. The researcher concludes that turn talking with infants builds a crucial foundation for later communication.

6.5.2.6 Communication through sentence (sentence expansion)

The findings show that when children are growing up, it is important that parents and caregivers shift from the usage of words when they are communicating with them to the usage of sentences. The study reveals that the usage of sentences when communicating with children exposes them to an opportunity use words appropriately. Similarly, Oddo and Castleberry (2013) stress that caregivers should be a model to children. Modeling language includes exposing the child to new vocabulary and to correct grammar while speaking. Providing accurate language inputs can include commenting about what the child is doing, as well as adding a word or phrase to the child's short sentences, exposing a child to synonyms, or modeling the correct sentence structure. Brock and Rankin (2008) also concur that parents and caregivers enhance babies' language by providing words and extending the babies' contributions to full sentences.

When caregivers communicate with children through sentences, the latter slowly start to combine words to make sentences and, with time, children begin to apply the rules of tenses as they gradually acquire tenses (Bartolotta & Shulman, 2013). Nevertheless, Participants in the current

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study indicated that parents should use simple sentences and convey them in a soft and straightforward way to children, while at the same time avoiding the usage of motherese. The study concluded that when children grow older, parents should increase the language stimulating activities they use to increase the children's vocabulary. The study identified the following objects and activities to be used when children are older than one year: toys, pictures and charts, explaining meanings of words, asking questions, turn talking and sentence expansion.

6.6 Environmental factors that influence language development in children

The current study findings indicate that a stimulating home environment is very important in the development of language among children. This theme was guided by learning theory of Skinner, which indicates that language is determined by environmental factors. Skinner highlights that children learn language when they are exposed to stimulating environment (Skinner in Swartz, et al,. 2007). The study identified several environmental factors that can be used to foster the development of language in children. In developing countries, research consistently demonstrated that the assessment of home environments positively correlated with children's cognitive and social development. Previous studies, such as Hauchuan (2013), indicated the importance of a stimulating home environment on language development. In a study conducted in New York by Iltus (2006) titled "Significance of home environments as proxy indicators for early childhood care and education", home environments were found to be a major factor that influences the overall development of children's language. It was found that children have their early interaction with family members and that this interaction is of great importance in the development of the language of those children. Availability and quality of resources for learning and playing were found to largely determine the nature of these interactions. Iltus (2006) further describes the stimulating home environment as an environment with books and play materials.

To introduce children to stimulating environments, Hauchuan (2013) indicated that, in China, parents take their children to various talent-developing classes, such as music, arts and sports and that several parents believe that kindergarten and schools are the right place for children to receive authentic language education while home is not. Parents, therefore, solely count on the teachers in kindergarten for their children's language development. In a study done in the UK by Law, et al. (2010) on effects of abuse and neglect on the development of children's speech and language, it was found that there was a strong relationship between children's environment and their ability to use words at the age of two years. Previous findings indicate the importance of a

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stimulating environment on language development. The following environmental factors were identified as essential for fostering language development: communication, parents' levels of education, socioeconomic status of the home, caregiver's personality and the availability of other children in the family.

6.6.1 Communication rich environment

Communication was identified in this study as the most crucial tool for fostering language development. Findings indicate that it is important to expose children to an environment where there is communication. Communication can be among adults, but it is also very important that parents communicate with their children. Participants indicated that even when the children are exposed to an environment with several language-fostering tools, if there is no communication, children will not be able to learn language.

The study also revealed that it is important for parents to provide an environment where language is used. The findings of a study done by Alston and James-Roberts (2005) also indicates that mothers of children who learn language at a younger age spend more time communicating with their children. Mothers of children who were found at-risk of not developing language, communicate less with their children than mothers of not-at-risk children.

It was also found that mothers of at-risk children spend much of time with their children but without interacting with their children, compared with mothers of not-at-risk infants. In addition, limited or poor quality of parental communication with children can impede infants' language development (Thorpe, Rutter & Greenwood, 2003). The researcher concludes that playing and spending time with children without communicating with them hardly stimulates language.

6.6.2 Family socioeconomic status

The socioeconomic status of the household was also identified as having an impact on the development of language in children. The study findings show that children from families with a high socioeconomic status are exposed to a language fostering environment, hence they learn language fast. Participants pointed out that those children are exposed to things such as radio and television and playground with language fostering tool. These findings are in line with Tamis-Lemonda and Rodriguez's (2009) study which revealed that children who are born in low home

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socioeconomic families are at risk of early academic language development difficulties compared to those that are born in high socioeconomic status homes. They further highlight that the language development of children who are born in low income households tends to be behind that of their peers and that these children develop vocabulary at a slower rate than their peers from well-to do families.

However, in a study conducted by Hamilton, et al. (2000), on infant vocabulary development assessed with a British communicative development inventory, it was discovered that there is no correlation between vocabulary development and socio-economic status. These findings were also supported by Alston and James-Roberts (2005) who argue that children were not at risk due to their parents' social economic status but because of other factors.

6.6.3 Parents' educational levels

The study also revealed that the educational levels of parents play a role in the development of language in children. It was revealed that parents with high educational levels expose their children to language fostering environments more than those with lower levels of education. The study shows that parents with high levels of education expose their children to things such as books and toys.

According to Tamis-Lemonda and Rodriquez (2009), mothers with fewer years of education read to their children less frequently and exhibit less sophisticated language and literacy skills. This may affect the quality of their verbal interactions with their children and reduce the children's ability to learn language. In addition, Herman, Woolfe, Roy and Woll (2010) found parental education to be significantly related to children's vocabulary development. Furthermore, the findings of a study conducted in South Africa by Cockcroft, Amond and Shoellaart (2008), titled "Level of maternal education and performance of black South African infants on the 1996 Griffiths mental development scales" showed that children with highly educated, professional mothers performed significantly better than infants with less highly educated, non-professional mothers on the GQ and the Locomotor Scale (Scale A). In contrast, Alston and James-Roberts (2005) indicated that parental educational or socio-economic levels has no impact on the development of a child's language. However, the current study findings concur with several studies that show that the relationship between parents' educational levels and exposure to stimulating activities have an effect on the children's language development.

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6.6.4 Book provision

In this study, parents who are educated indicated that they expose their children to books. However, participants with low education levels stated that they do not expose their children to books. Participants identified environments with books as vital for fostering language development in children. Reading books to children was identified as one of the ways that can be used to foster language development. Bus, Van Lizendoorn and Pellegrini (in Iltus, 2006) concur that when children observe their parents reading, this has a lasting impression on them. Teale (in Litus, 2006) further argues that reading to children at home is positively correlated with their language development, growth of vocabulary, eagerness to read, and success in reading at school.

In contrast to the findings, Karras and Braungart (in Law, et al., 2010) found no relationship between reading for children at four months of age and their language outcomes at 12 and 18 months. However, they indicated that shared reading may start at eight months. Sharing a book at eight months was strongly associated with children's expressive language at 12 and 18 months. Nevertheless, the findings show that reading books can be used to foster the development of language. Participants were of the opinion that books are language fostering tools. However, the findings show that most mothers do not use this method to foster language development.

6.6.5 Provision of Toys

The findings show that some parents expose their children to toys. Participants indicated that children should be exposed to an environment with toys. An environment with toys stimulates the development of language. Similarly, Tamis-LeMonda and Rodriguez (2009) concluded that it is important for parents to provide children with language stimulating materials such as toys. The current study also found that it is important for caregivers to use colourful toys to get the attention of the children. Toys will help them to learn both the names of objects and colours. Iitus (2006) argues that availability of toys at home can serve as a good indicator of parental concern and sensitivity towards play. Iltus (2006) further states that toys help to create a stimulating environment within the home which would encourage exploration and problem solving.

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6.6.6 Availability of television at home

In addition, the study shows that both radio and television can expose children to words and sounds of the language. However, participants indicated that televisions are useful when children are introduced to a second language. The study also indicated that some of radio programmes aim at introducing children to nursery songs and children's games. Alston and James-Roberts (2005) concur that the not-at-risk infants spend more time exposed to television than at-risk infants. However, although they were exposed to television, parents and other family members were also available to explain to children words appearing on television. This prevented leaving them alone with a television as a 'baby-sitter'. Television provided a context for social activity. This is consistent with the findings of this study which discovered that the environments of the not-at-risk infants resulted in higher levels of social interaction more than the environments of the at-risk infants. However, Gordon and Ward (1995) argue that in home environments that include high levels of unstructured auditory stimulation, such as television or radio, high volumes might interfere with the development of listening skills.

Although television was seen as having a positive impact on the development of language in children, participants also reported that it could have a negative impact. A study conducted by NICHD (2001) on early childcare and youth development, following more than 1300 children from birth to school age years, revealed that children who spent more time in front of the television had smaller vocabularies as well as more behavioral problems. These children did not do well in mathematical problems. The same study also revealed that in-home environments which were more stimulating and well organized, children had better vocabularies, advanced attention and memory skills; they also got along better with their peers (NICHD, 2001). Similarly, a study conducted by Law, et al. (2010) which investigated the relationship between the use of television in the home and language development as well as the impact of children's television on vocabulary development, revealed that, for children under the age of two years, television limited their language development. Although there is some evidence that children who are 18 months old are attentive to visual stimuli from television, and respond verbally to television, it is also apparent that children of this age find it more difficult to acquire new vocabulary and understand words via the television than they do in a face-to-face interaction.

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6.6.7 Availability of playground

The findings indicated that availability of a playground is also important in fostering language development. It was revealed that the playground motivates children to play. Hudson and Tompson (2001) concur that a playground is important for children since it provides an opportunity to free play. They add that free play gives children an opportunity to learn and interact with others. In addition, the playground also enriches and expands the children's cognitive development.

6.6.8 Personality of parents and caregivers

The personalities of caregivers/parents are very important in the development of language in children. Parents/caregivers are a vital component in language development. Their personalities can influence children to communicate or cause them to discontinue using language. The study revealed that caregivers who are supportive, patient and who reinforce and motivate children to learn language are very important. Tamis-Lemonda and Rodriquez (2009) concur that the quality of parent-caregiver interactions plays a key role in children's early language development and learning. They further argue that the amount and style of language that parents and caregivers use when communicating with their children are the strongest predictors of children's early language. In addition, parents who respond to their children's verbal and exploratory initiatives (through verbal descriptions and questions) lay a good foundation for their children, and their children tend to have more advanced receptive and productive language, phonological awareness, and story comprehension skills (Tamis-LeMonda, et al,. 2001). Manolson (in Popich, 2003) argues that an interactive personality that includes play is important because it encourages turn taking. It also encourages infants to respond and involves repetition.

In a study conducted by Murray and Yingling (2000), on home stimulation and language development in 58 toddlers, 2 years of age, results indicated that mothers who had established secure good relationships and provided stimulating home environments had children with the highest language vocabulary. The study concluded that parents/caregivers' personalities influence the development of language in children. The following personality traits were found to foster the development of language in children:

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6.6.8.1 Reinforcement

The study shows that, for a language to develop, it needs to be reinforced. Parents should positively reinforce children whenever they try to pronounce a word. The study indicated that positive reinforcement can be in the form of smiling, clapping hands and repeating the words that a child is trying to pronounce. In support of the findings it is indicated by Mathew (2011) that when children are positively reinforced, they tend to learn language fast. According to Odda and Castleberry (2013), when infants begin to produce sounds (i.e., coo, babble), it is important for parents to reinforce the sounds by responding to them. The parents' responses help the children to produce more sounds in order to respond to them. This emergence of reciprocal interactions was found to be a foundation for later social skill development.

When the child begins to make sounds, such as grunts, as well as frowns, caregivers should imitate these actions (American Speech-Language-Hearing Association, 2011), and when the child smiles, caregivers should smile back too and respond verbally (Mathews, 2011).When caregivers do that, they encourage the child to keep on trying to communicate using sounds. Louw and Louw (2007) and Mathews (2011) argue that, to enhance language development, caregivers must allow the child to practice new words and reward them when they say a new word. The study concluded that when children are encouraged with praise, they are more likely to pronounce unfamiliar words. These findings are in line with Skinner in Learning theory who suggested that one of the mechanisms to acquire language is reinforcement.

6.6.8.2 Correction of pronunciation

The study found that when parents over correct children's mistakes, this leads to non-production of words by children. In contrast, parents who do not correct the mistakes, but say the word correctly, promote the usage of language. In addition, Lao, (2015) argues that recasting is another useful technique to nurture language development. Recasting refers to rephrasing what a child would have said in a more correct way. It is similar to echoing except that the caregiver does not repeat what the child says in exactly the same way. Instead, the idea of recasting is to paraphrase the child's utterance in a way that is more understandable. For instance, if a child says, "Mine ball", the caregiver might say, "That is my ball".

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Parents are encouraged to rephrase the incorrect statement the children would have made while trying to communicate. This would enable the caregiver to model the correct speech for the child to imitate. Kennison (2013) categorizes child-directed speech into three stages. Firstly, the parent uses repetition and variation to maintain the infant's attention. Secondly, the parent simplifies speech to help in language learning. Thirdly, the parent modifies the child's speech to maintain the responsiveness of the child. In addition, these modifications develop into a conversation that underpins the development of language at a later stage (Robert, 2012). The researcher concludes that parents should recast, rephrase and repeat words correctly to foster language development instead of trying to correct the children's mistakes since it leads to language delays.

6.6.8.3 Patience

Learning language is not an easy task; it requires patient caregivers. The study indicates that, sometimes even when parents are helping a child to learn language, children take time to do so. In addition, there are language disorders that make it difficult for children to learn language. The study indicates that, because of all these challenges that children may face while learning language, it is important for parents to be patient with the child. Trauner, Ballantyne, Chase and Talla's (1993) concur with the present findings indicating that parents of children with language disorders are more likely to be frustrated by their children's disorders. However, parents of children with language disorders should be supportive and patient with their children. Special Learning (2011) indicates that children with developmental disorders require a lot of love and patience.

6.6.8.4 Supportive personality

The present study discovered that a supportive personality has a positive influence on a child's language development. The results show that parents should show love, relate well with their children and support them fully. These findings are in line with Guralnick's (in Popich, 2003) who found that caregivers are the primary source of emotional support for their children and that positive parenting functions are correlated with better and fast language acquisition. In addition, the findings of the present study show that, when parents are supportive of their children, they tend to learn language with ease. Children are more likely to repeat words and sounds that are supported by their caregivers. According to Brock and Rankin (2008), parents and caregivers can support babies' sounds and words, by prompting and repeating those sounds and words. The

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researcher concluded that parents may support children language development through talking, listening, responding to a child, and recognition of the child's feelings. They should also read together with the child and narrate daily activities.

6.6.8 Availability of other children

Availability of other children in the family was also indicated as an important environment factor in the development of language in children. Those that can communicate will teach language to those that are not able to communicate. Participants even indicated that they even invite their neighbors' children to come and play with their children in order for their children to learn language fast. Extended families and day care centers were also mentioned as an environment that can be used to expose children to other children. It is through play that children learn how to interact with their environment, discover their interests, and acquire cognitive, motor, speech, language, and social-emotional skills (Odda & Castleberry, 2013). Hernandez (2001) highlighted that interaction with other children helps children to express ideas and develop oral skills. Through playing with their peers, children lean social and cultural rules.

The study concludes that parents' personalities influence language development. Parents should support their children and be patient with them. They should avoid correcting children's mistakes and instead should repeat words that are pronounced correctly. As the children learn to pronounce words correctly, parents should encourage them as well as expose them to their peers.

6.7 Early Childhood Education (ECE) on language development

Early childhood education helps children to learn a lot about the world around them. Early childhood education is important for children because it enhances their mental, physical, emotional and language development.

6.7.1 Definition of Early Childhood Education

Participants defined early childhood education as education which is given to children from the age of one year to five years. The findings show that this education can be done at home or at day care centers. However, the findings show that parents prefer to use day care centers to teach the children than themselves. Early Childhood education (ECE) refers to a range of processes

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that help and support children's development during the early years of life. It incorporates education, social and emotional care as well as intellectual stimulation. It can be done by parents, siblings, grandparents and other extended family members. However, it can also be done at day care centers by caregivers and it focuses on the need to promote children's healthy development (United Nation Education, Scientific & Cultural Organization, 2012). The findings further indicate that early childhood education aims at educating children about how to use the toilet, social skills and the norms and values of a society. Participants also indicated that early childhood education sharpens children's cognitive skills. Samuelsson and Kaga (2008) argue that early childhood education influences and shapes young children's attitudes, values, behaviours, habits and skills.

6.7.2 The importance of early childhood education on language development in children

Childhood is the most crucial time for children to learn language. Children need positive early learning experiences to help their intellectual, social and emotional development and this serves as a foundation for later school success.

6.7.2.1 Children learn language fast

The findings of the current study showed that children who are exposed to early childhood education at day care centers learn language at a very young age and they learn many words within a short period of time. Parents indicated that they sometimes fail to spend time with their children. This may hinder the development of the children's language. However, when they are attending day care centers, they are exposed to language more than they are at home. These findings are similar to those of Hamilton, et al. (2000) who found that day-care children might learn words at a faster rate than those children who do not attend cay care centers.

6.7.2.2 Exposure of children to other children

The findings also indicate that early childhood education exposes children to other children, which, in turn, fosters the development of language. As already noted above, the availability of other children helps children to learn language fast. Exposing children to other children was also said to help children learn social skills such as playing with others and communicating properly with other people. Early Childhood Education Zone (2016) concurs with the present findings and

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highlights that early childhood education exposes children to other children, and this, in turn, helps boosts the children's vocabulary, which is a critical component in language development.

Participants further indicate that children increase their receptive (listening) and expressive (speaking) vocabularies primarily through social interactions. While children are engaged in pretend play and group activities with other children, they use language skills to negotiate those interactions. Early Childhood Education Centre (2015) further indicates that child development experts agree that play is very important in learning, emotional and language development of all children. Bento and Dias (2017) also state that less conflicts occur during outdoor play and children tend to cooperate more with one another, indicating that exposing children to other children helps them to learn language from others. The researcher concludes that childhood education exposes children to their peers. This strengthens their social skills, their interaction with others and their development of language.

6.7.2.3 Exposure of children to language stimulating environment and full-time caregivers

Early childhood education at day care centers was also seen as a major step of exposing children to a language fostering environment and to full time people who are dedicated to teaching language and other things to children. Parents also indicated that at day care centers children are more exposed to several tools that can sharpen their language than at home and to full-time caregivers. O'Brien, et al. (1994), similarly, argue that children who attend early childhood schools learn language better and faster than those who are not attending day care centers. They further state that, this is because children who attend day care centers are exposed more to cognitive stimulation and learning opportunities than children raised at home.

According to McClelland, et al. (2003), the quality of early childhood education influences children's language development. Early Childhood Education Centre (2015) adds that the availability of caregivers is of great importance in the development of children; it helps children to learn to trust and look for security and care, which are important for the development of language. The researcher concludes that childhood education exposes children to full time caregivers. This might also help children to develop trust, which, in turn, will reduce their chances of developing other disorders such as anti-social and adjustment disorders.

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6.7.2.4 Providing children with knowledge

The findings show that early childhood aims at educating children on many things that they would require for survival. Participants indicated that it helps if children know things that are harmful to their health as well as how different people live. Early childhood education years are foundation years which can help children adapt to school systems and learn successfully. Cox (2012) also argues that, during this period, children develop skills that form a foundation for reading, counting, and social interaction. Early Childhood Education Zone (2016) adds that, at this age, repetitious rhyming is also a useful tool for teaching children the patterns of speech, as well as how to listen for syllables and distinguish the differences in similar-sounding words.

6.7.2.5 Providing children with social skills

The findings of the current study show that early childhood education helps to educate children on social skills and basic things that are important for their survival. participants also indicated that it helps children to know about their surroundings as well as the norms and rules of the community. In addition to gaining knowledge, participants also indicated that early childhood education helps children to learn about the norms and the values of their society. The findings show that early childhood is used to pass cultural values from one generation to the other. These findings are similar to those of Samuelsson and Kaga (2008) who argue that it is in the early childhood period that children develop their basic values, attitudes, skills and behaviours. They also indicated that children learn cultural norms and customs during early childhood education.

Early Childhood Education Centre (2015) also argues that early childhood education helps children learn relationship and social skills as well as develop values and ethics. Early childhood education helps children acquire the ability to handle different social interactions. When children are surrounded by their peers, they develop social skills, in order to deal with various social situations (Buffington, 2017).

6.7.2.6 Introducing children to learning environment

Lastly, the findings show that early childhood education introduces children to the learning environment. The findings show that early childhood education trains children to be comfortable with the learning environment. Similarly, Buffington (2017) argues that early childhood education

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helps children to perceive learning as something that is fun and not scary. Children get to play and learn several things while at the same time learning to listening to instruction. Buffington (2017) further indicates that early childhood education helps children to adopt learning habits, improve creativity or socialise. It further exposes children to skills like listening attentively, avoiding too much talking and following rules. The researcher concludes that early childhood education helps children in several ways. It exposes children to their peers and to a language stimulating environment as well as full-time caregivers who will help the children learn language fast. It provides children with social skills and knowledge and also introduces them to the learning environment which prepares them for formal education.

6.8 Language disorders that are associated with language development in children

The findings of this study show that there are several disorders that children may suffer from during the development of language. The theme of language disorder is guided by the social cognitive learning theory, which indicates that learning language is a process of learning words and meaning which relies on the ability of human brain (Levine & Munsch, 2011). Bandura indicated that language disorders develop when children fail to self-regulate their language development even when they are exposed to stimulating environment. The study also shows that there are speech and psychological disorders that affect the development of language in children. Lastly, participants indicated that there are also several medical conditions that may affect the development of language. Similarly, Zieve (2014) also found that some children experience difficulties when they learn language. Sadock and Sadock (2007) also argue that the process of language acquisition can be disturbed by various language disorders. They further highlight that these disorders are mostly caused by brain injury or volume of the cortex. According to Willinger, et al. (2003) disorders in the development of language include delays in reaching other developmental milestones, impaired verbal and nonverbal intellectual capacities, expressive and receptive language disorders, reading and spelling difficulties, and behavioural problems.

6.7.1 Definition of language disorder

Participants defined a language disorder as the inability of a child to communicate or to use language. They further indicated that a language disorder can result is problems pertaining to vocabulary and construction of sentences. Participants further indicated that, sometimes, disorders are a result of the child's inability to understand spoken language. American Psychiatric

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Association (2013) also defines language disorder as a neurodevelopmental disorder which manifests itself through the child failing to get the meaning of words (expressive language disorder), or understanding the message coming from others (receptive language disorder). Similarly, Tallal (1988) defines language disorder as a disorder that happens when one or more language functions (cognitive, linguistic) fail to develop normally. Sadock, Sadock and Ruiz (2015) add that language disorders are difficulties in the development and the usage of language; it can be spoken or written language. The impairment includes reduced vocabulary, failure to use grammar rules and an inability to construct meaningful sentences. Although most participants were able to show their knowledge of language disorders, some of the participants indicated that they do not know what language disorders are.

6.8.2 Disorders that are related to language development in children

The study identified disorders that are related to the development of language. The language disorders that the study identified include expressive language disorder (inability to share thoughts, ideas, and feelings), dyslexia, and inability to understand spoken language (receptive disorder language disorder).

6.8.2.1 Expressive language disorder

The findings show that children with expressive language disorder have problems expressing their thoughts and ideas. Participants pointed out that such children know and understand language but are unable to use words that they know to express themselves. The results of the present study are consistent with the findings of Simms (2007) who states that children with isolated expressive language disorder have normal nonverbal cognitive ability and age-appropriate understanding of language but are unable to express themselves through language. These children have a small vocabulary and difficulties learning unfamiliar words.

Children with expressive language disorder also have a problem of retrieving words that they know and even substituting words, they usually replace the names of objects by the word "thing". These children use short sentences and omit some words when talking. Johnson and Beitchman (2005) concur that children with expressive language disorder can understand language but are able to communicate. In conclusion, children with expressive language disorder have a tough time

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remembering and putting words together in a sentence, making it difficult for them to express themselves.

6.8.2.2 Dyslexia

Dyslexia is a language disorder in which children have difficulties explaining symbols, and pictures. The findings show that when these children start primary school, they have trouble understanding written words and are unable to read. Participants indicated that these children can communicate and use words properly, but they have a problem explaining written language. British Psychology Society (1999) also defines Dyslexia as a complex neurological condition which affects many areas of learning and function and it may be described as a specific difficulty in reading, spelling and written language. Schirmer, Fontoura and Nunes (2004) further argue that dyslexia are a language disorders characterized by specific reading and writing difficulties. They further indicate that there are two types of dyslexia, namely developmental dyslexia and acquired dyslexia. Developmental dyslexia refer to reading and writing disorders of environmental origin. Genetic factors are the causes of developmental dyslexia. In acquired dyslexia, acquired reading and writing skills are lost due to brain damage.

6.8.2.3 Receptive language disorder

Inability to understand spoken language was also indicated as one of the language disorders that affects children. Participants indicated that children with this disorder are unable to understand spoken language. The study further revealed that this disorder usually happens because of other medical conditions. These findings are similar to Morrisey (2012) who argues that a receptive language disorder is an impairment in the understanding of a spoken, written, gestural and other symbols of language. Children with receptive language disorder have significant deficits in the level of development of understanding of language. These deficits affect how the child functions socially or academically. Children with receptive language problems can have great difficulty understanding spoken language. Sadock, et al. (2015) findings are in line with the findings of this study. They argue that children with receptive language disorders have problems with auditory processing skills such as discriminating between sounds and memory of sound sequence. The study concludes that receptive language leads to communication barriers, lack of understanding of language and inability to communication with others.

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6.8.3 Speech disorder associated with language development in children

Speech disorders are a type of communication disorder where 'normal' speech is disrupted. Besides language disorders, the current study identified speech disorders as a problem to language development. Speech disorders were described as a problem that affects the speech of children. Similarly, Sadock, et al. (2015) define speech disorders as difficulties in pronouncing words correctly due to omission of words and distortion of sounds.

6.8.3.1 Lisps/Articulation disorder

A lisp is a speech disorder that affects the pronunciation of certain words. The findings show that children with lisps have problems with pronouncing words that have letters "R" and "S", as a result it is difficult to understand what that child is trying to communicate. The participants also indicated that this speech disorder is inherited. The Children's Hospital at Westmead (2013) defines articulation disorder as a disorder in which children are unable to make sounds and words. Similarly, Wegerif, et al. (2005) argue that, for people to produce sounds and words, parts of the mouth, such as the lips, teeth, tongue, jaw, and palate (roof of the mouth), need to move together to make shapes. These parts of the mouth regulate the movement of the air that comes from the vocal cords, and this helps in the production of words and sound.

However, children with articulation disorders have either one or more problem in that part of their mouths. Children with articulation disorders make incorrect words and sounds. This makes it difficult for a listener to understand what those children are trying to say. Sharp and Hillenbrand (2008) argue that there are three types of articulation disorders, namely omissions, substitutions, or distortions. Omission is when a child misses some words when talking. Substitution means putting words and the alphabet where they do not belong. In distortion, the parts of the word are mostly there, but they are a little wrong, for example, "shlip" for "ship". The causes of articulation disorder include physical handicaps such as cerebral palsy, cleft palate, or dental problems and hearing loss (Kennison, 2013).

6.8.3.2 Stuttering

Stuttering is a speech disorder in which children repeat either letters or words when they are talking. The findings show that, because of the repetition of words and letters, it is difficult for such

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children to communicate a sentence. It was also suggested what when communicating with those children one should be patient with them. Simms (2007) findings are in line with those of the current study reveal that stuttering is when children's speech does not flow smoothly. It could either be interrupted by repetition of sounds or words, stopping in the middle of a word, and holding a sound or word for a long time. The study also revealed that, when children stutter, they usually blink their eyes quickly, their lips might shake, or they might move in a way that shows that they are struggling to produce a word. Bartolotta and Shulman (2008) concurs that spluttering may affect a child's language development and speech skills and that each case may differ according the situation. Some children may stutter more in certain situations. Usually, children stutter when they speak in front of many people or over the telephone.

6.8.4 Psychological disorders that affect the language development in children

The study also identified two psychological disorders that may affect the development of language in children, namely mental retardation and autistic disorder. Willinger, et al. (2003) argue that several language disorders and speech disorders are often associated with intellectual impairment and autistic behaviour. The following are the psychological disorders that affect the development of language in children

6.8.4.1 Mental retardation/ Intellectual disability

The findings show that children who suffer from mental retardation also suffer from language development problems. Simms (2007) also found that poor speech or language development are often associated with chronic physical health such as mental retardation. The most common association is with nonspecific mental retardation, but several known syndromes have distinct language patterns. Similarly, Sadock, et al. (2015) define mental retardation as a cognitive and social impairment characterized by limitation in both intellectual functioning (such as reasoning, learning, problem solving) and in adaptive behaviour (such as conceptual, social and practical skills). Memisevic and Hadzic (2013) further argue that children with intellectual disabilities have an even higher risk of developing speech and language disorders. They also highlighted that mental retardation has a detrimental effect on language development.

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6.8.4.2 Autistic Spectrum/disorder

Another psychological disorder that the study identified is the autistic disorder. Participants indicated that children with autistic disorders also experience challenges when they learn language. Mitchell, Brian, Zwaigenbaum, Roberts, Szatmari, Smith and Bryson's (2006) findings are similar to those of the current study in that they also defined autism-related developmental disorders as a qualitative impairment in both verbal and nonverbal communication. In addition, they state that receptive and expressive language impairments are present in most children with autistic disorders. Similarly, Plumet, Goldblum and Leboyer (1995) argues that there is evidence that family history of autism is highly correlated with language impairment. The results are consistent with the findings of Mitchell, et al. (2006) who also reported delays in the very early language and communicative development of children diagnosed with autistic disorders.

A study conducted at the University of Kansas in the United States of America shows that autistic disorder is a developmental disorder characterized by the presence of impairment in the following areas: communication, social interaction, repetitive and stereotyped behaviors, interests, and activities. Children with autistic disorders have irregular patterns of language development because of the lack of verbal communication skills (Rice, Warren & Betz, 2005).

6.8.5 Conditions that affect the language development in children

The findings of the current study reveal that there are other conditions that affect the development of children's language. These conditions include medical conditions such as cerebral palsy, malnutrition, physical abuse and a low Apgar score. The findings are similar to those by Neves, Morais, Teixeira and Pinto (2016) who found that biological risk and medical factors play a vital role in the development of children and can impair the cognitive skills and normal language development. Conditions, such as prematurity, post maturity, the Apgar score, low birth weight and complications during pregnancy and birth, may also impair the language development of children (Zerberto, Cortelo & Filho, 2015).

6.8.5.1 Cerebral palsy

The findings show that children with cerebral palsy experience challenges with their overall development. The findings also indicate that such children also experience language disorders.

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Murra (1995) concurs that cerebral palsy has a strong correlation with delayed language development. Cerebral palsy is defined as a condition characterized by paralysis, weakness, incoordination, or unusual motor function due to injury in the motor areas of the brain. Alliance Annual Report (2015) findings were similar to those of the current study in that they reveal that children with cerebral palsy have poor motor control of the mouth and tongue which makes it difficult for them to produce speech and voice. Simms (2007) also adds that children with cerebral palsy have weaknesses and impaired control of muscles for both speech and non-speech functions such as chewing and swallowing. Poor coordination of respiration associated with cerebral palsy also inhibits speech production (Simms, 2007).

6.8.5.2 Physical Abuse

Ill-treatment, such as child abuse, was also identified as a factor that affects the development of language in children. The study shows that when children are physically abused, they withdraw from communicating, hence it becomes difficult for them to learn language. The findings also indicated that when children grow up in an abusive environment, they isolate themselves. Eigsti and Cicchetti's (2004) also found that parental neglect has an impact on children's language development, and this hinders their development of language. Children who are neglected are more likely to stay at home alone and this reduces language stimulation (Law, et al., 2010). Margolin and Gordis (2000) also indicate that children's development is expected to take place within a nurturing environment. Where the environment is infected by violence and fear as well as physical abuse, all normal tasks of growing up are affected. Exposure to violence and physical abuse can result in delayed language development (Margolin & Gordis, 2000).

6.8.5.3 Low Apgar scores/ Prenatal and Perinatal factors

The findings also indicate that children who are born with low Apgar scores experience problems with language development. The Apgar score (or scale) gives an assessment of the infants' responses immediately after birth. According to Carniel, Furtado, Vicente, Abreu, Tarozzo, Cardia, Massie and Cervelra (2017), infants with an Apgar score of less than 7 at 5 minutes are considered as high-risk and usually have language development problems. They are also associated with cognitive and development impairment (Razaz, Boyce, Brownell, Jutte, Tremlett, Marrie & Joseph, 2015). Some scholars also argue that children who are born with lower weight performed worse on the language assessments than children with higher weights (Caldas,

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Takano, Mello, Souza & Zarala, 2014). Moreover, children who are born with a low birth weight have been found to have language delays (Simms, 2007).

6.8.5.4 Malnutrition

Malnutrition was also identified as a factor that lessens the development of children's language. The study shows that malnutrition affects the overall development of a child. The findings of a study done by Shim, Ahn, Cho and Park (2014) on how early aggressive nutrition enhances language development in very low-birthweight infants, confirmed that early poor nutrition groups showed a lower failure rate of language category than the conventional nutrition groups. They further argued that protein and energy intakes in the first week of life contribute positively to normal language development.

The study concludes that there are several things that contribute to language disorders. The study identified two psychological disorders that contribute to language disorders, namely mental retardation/intellectual disability and autistic spectrum. The following conditions were found to cause language disorders: cerebral palsy, physical abuse, low Apgar scores and malnutrition.

6.8.6 Treatment of language disorders in children

According to Law, Dennis and Chariton (2017), 5% to 8% of children develop language disorders. They further indicated that language disorders persist to adolescence and that these children also suffer from reading and spelling difficulties when they start school. However, language disorders can be treated. Skinner in social learning theory indicates that language disorders can be treated by allowing the child to actively participate in their language development. The treatment can be done at hospitals or by speech therapists. The study reveals that the treatment involves both the speech therapist and the parents of the child. Similarly, Law, et al. (2017) state that treatment of language disorders can be done at various places such as at home, health care service centers, schools, nursery schools and private practices.

The study also indicated that, when children are experiencing language disorders, parents are also affected psychologically. As a result, participants indicated that parents should also consult psychologists. Hayiou-Thomas, Dale and Plomin (2014) had similar findings which indicate that the majority of children start talking at 10 to 16 months. However, this is not the case with children

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who have language disorders. Children who are slow to start talking may stress their parents and cause them anxiety. Spiliotopoulou (2009) also argues that dealing with children's language and behavioral difficulties can be frustrating for parents and family members.

Spiliotopoulou (2009) adds that it is also important for parents to seek help and support to reduce the stress and frustrations. This may also help them to find ways of helping their children. Frye's (2017) findings are also similar in that they underline that family or parents' therapy is important. Frye's further indicated that parents and family members need to be educated about the children's disorders as well as the different ways that can be used to help treat the disorders. This therapy can also reduce the stress faced by parents and family members. Similarly, Law, et al. (2017) argue that parents' therapy increases parental knowledge about speech and language development. Parents are also educated on the activities that they should do to stimulate language development at home.

6.9 Conclusion

Language is a tool which is used to convey messages from one person to the other and it can be in the form of words or signs. The study concludes that language development is important for children. Language helps children to make friends, communicate with others and to communicate their wants and needs. It also helps them to express their feelings, understand the world and to stimulate children's cognitive development such as problem solving and reasoning capacity. Children with delayed language experience isolation, loneliness, a low self-esteem, discrimination and self-destructive behaviour.

Activities meant to influence language were categorized into two groups. Group one includes activities that can be used with children who are less than a year old. These include, communication, child lead, and nursery songs. Category two includes activities that can be used with children who are older than two years and these include turn talking, sentence expansion and asking questions. The study also concludes that early childhood education stimulates language development since it exposes children to their peers and to a language stimulating environment. The study was also able to identify language disorders and the treatments that can be used to treat those disorders. The researcher used the findings of this study to development a model to facilitate children's language development. the model developed is addressed in the next chapter.

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7.1 Introduction

This section describes the conceptualized model developed and the methodology used to validate it. The model was developed from the findings of the study. The following topics were discussed in detail: concept analysis, conceptualized model development and model validation.

7.2 Concept analysis

Concept analysis is defined by Rodgers (2000) as a method used to explain the application, importance and the usage of a concept in a specific phenomenon. The purpose of concept analysis is to promote an understanding of concepts among users. Concept analysis is used to increase knowledge for practice by clarifying and explaining participants' understanding of concepts. Walker and Avent (1995) define concept analysis as a method which is used to identify, clarify and give meaning to words. The purpose of research is to contribute to scientific knowledge (Hockey, 2003).

It is important for the researcher in this study to analyze concepts to enable the users of the model to understand the concepts used in the model and the meanings attached to those concepts. It is also important to analyze concepts when analyzing knowledge gained through the experience of participants. Concept analysis helps to give the meaning of concepts as used in a particular culture (Mulhal, 1992). In the current study, one concept, which is reinforcement, was analyzed to help users of the model to understand its meaning and how to it should be used.

The concept analysis method used in this study was guided by Walker and Avant's (2005) stages of concept analysis, which are as follows: Selection of a concept; determining the aim and purpose of analysis; definition and uses of the concept; determining the attributes of the concept; identifying the antecedents of the concept; identifying the consequences of the concept; empirical reference; and case description.

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Stage 1: Select a concept

Participants indicated that it is important for parents to encourage children when they are trying to pronounce new words. Participants indicated that reinforcement encourages children and that when children are encouraged, they continue to pronounce new words. Data collected show that reinforcement is important for language acquisition and development in children. In the current study, the concept to be analysed is reinforcement since a number of participants mentioned it during data collection. However, the concept has a diversity of meanings depending on the situation or context within which it is used.

Stage 2: Determining the aim or purpose of analysis

The aim of concept analysis in this study is to clarify the meaning of a selected concept. Concept analysis will enable the users of the model to understand the meaning of reinforcement in this study. Concept analysis helped in the development of the operational definition of the concept used in the model (reinforcement) and users of the model will be able to understand and use the concept of reinforcement correctly.

Stage 3: Definition and uses of the concept "reinforcement"

According to Hawkins (1991), reinforcement is defined as strength or support given by an additional person or material or an added quantity. Hawkins further defines reinforcement as the strengthening of an existing feeling, idea or habit. The synonyms of reinforcement include, boosting, swelling, topping, building up, supplementing, increasing and augmentation. In addition, Heffner (2011) argues that the concept "reinforcement" means to strengthen, and it refers to the stimulus that increases the probability of a specific behaviour.

The concept "reinforcement" has been used in the discipline of health. In Psychology, the term "reinforcement" is used and defined by B.F Skinner. Skinner defines reinforcement as the administering of a stimulus after the behaviour has been performed, in order to increase the likelihood of that behaviour being repeated in future (Meyer, et al., 2002). In the current study, reinforcement is defined as a reward that follows a child word vocalization and increases the frequent occurrence of word production. In other words, reinforcement is a process which is used to increase the likelihood of a certain behaviour occurring repeatedly. Reinforcement is thus

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defined as a deliberate and thoughtful process of rewarding and encouraging individuals to repeat certain behaviours.

Step 4: Determining attributes of reinforcement

Attributes are characteristics of a concept. Walker and Avant (2005) define determining attributes as explaining characteristics of a concept, in order to differentiate that concept from other related or similar concepts. They further argue that it helps in clarifying the meaning of a concept. In the current study, three keys were used to define attributes of the concept reinforcement, **1**. Reward which is provided for word vocalization immediately after that behaviour has occurred; **2**. A reward following a desired behaviour with the purpose of increasing the likelihood of that behaviour occurring again; and **3**. Rewards delivered continuously the first time when a child pronounces a word and then more occasionally later, for example, only when a both old and new words are pronounced correctly. In the current study, reinforcement is thus defined as a deliberate and thoughtful process of continuously rewarding certain behaviours that are supposed to be repeated.

Step 5: Identifying the antecedents of reinforcement

According to Walker and Avant (2005), antecedents are events that must arise before a concept occurs. In the process of reinforcement, an individual should first be engaged in a certain behaviour for that behaviour to be rewarded. In the current study, the antecedent of reinforcement is the occurrence of a new behaviour, which is the pronunciation of a new word. In other words, a child should first pronounce a new word to be rewarded for pronouncing that word.

Step 6: Identifying consequences of concept reinforcement

Consequences are those events that occur because of the occurrence of a concept and that often stimulate new ideas (Walker & Avant, 2005). In the process of reinforcement, the consequences include repetition of a behaviour which has been rewarded. In the current study, the consequences of reinforcement include continuity of production of words by a child, which would lead to language development.

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Step 7: Empirical reference

Empirical reference refers to measurable ways to demonstrate the occurrence of the concept (Walker & Avant, 2005). In the current study, there is no measurable reinforcement. However, parents can evaluate if reinforcement is working by increasing the number of words that are spoken by the child after the reinforcements.

Step 8. Case studies

To further expand the concept of reinforcement, three categories of case studies were inverted developed by the researcher. The three developed cases are model case, borderline case and contrary cases. The abbreviation and names used in the cases are fictitious and have nothing to do with participants' names or the names of their children. The model case shows all three attributes of the concept "reinforcement", while the borderline case only has two attributes identified in the study. Lastly, a contrary case does not have any of the three attributes of reinforcement.

The model case

P.D. is a 40-year-old mother with three children. The youngest is Elisa who is three years old. P.D. spends most of her time with Elisa and always communicates with her. P.D. started communicating with Elisa from the first day Elisa was born. Every night, P.D reads a story book to Elisa and when reading books, she always points out objects and explains the purpose and names of those objects to Elisa. At 15-months Elisa pronounced her first word "mama". This excited P.D. and she clapped hands for Elisa with smiles (reinforcement). This type of reinforcement encouraged Elisa to keep on trying to pronounce words. In the beginning P.D. would praise and clap hands for every word that Elisa pronounced. However, after two-months P.D., reduced the praise; praises were now only given when Elisa pronounced new words. This type of reinforcement influenced Elisa to try and pronounce new words, in order to get praise reinforcement. At two and half years, Elisa was able to communicate many new words, and this led to language acquisition.

The model case above fully demonstrates all three attributes of concept reinforcement, namely reward which is provided for a behaviour immediately after the behaviour has occurred, an

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additional reward following a desired behaviour with the purpose of increasing the likelihood of that behaviour occurring and rewards delivered continuously at the beginning and then regularly only when a new word is pronounced correctly. Firstly, Elisa pronounced her first word and P.D rewarded the behaviour immediately after Elisa pronounced the word. Secondly, the case shows that the reinforcement encouraged Elisa to keep on trying to pronounce words. Lastly, P.D. reinforced Elisa's pronunciation of new words occasionally. All those three attributes helped the development of Elisa's language.

Borderline case

C.J. is a 30-year-old female who lives with her 2.8 year -old daughter Agnes. C.J. has been living and communicating with her daughter since her birth. When Agnes started to pronounce her first words, C.J. was always there to reward her efforts. The reinforcement was in the form of praises and these rewards encouraged Agnes to continue trying to pronounce words. This reinforcement led to an increase in the number of words pronounced by Agnes. However, when Agnes was two years old, C.J got a job, and this reduced the time she spent with her daughter. The reduction of time spent with her daughter affected the process of reinforcement, and this resulted in the reduction of the pronunciation of words, Agnes's language development was subsequently negatively affected.

The borderline case had only two out of the expected three attributes of reinforcement. At first, when Agnes pronounced new words, C.J. rewarded her. Secondly, the reward encouraged Agnes to continue to pronounce words. However, due to the absence of continuous and occasional reinforcement, the production of new words declined resulting in a slowing down in Agnes' language development.

Contrary case

B.B. is a 24-year-old undergraduate mother of a three years old girl. For the past 18 months, B.B. has been very busy with her schoolwork, resulting her spending very little time with her baby. Her baby spends most of her time watching television which keeps her company. The baby is exposed to words via television, which teaches her how to pronounce words. However, B.S. was too busy with her schoolwork to realise that her baby was trying to pronounce words. The result is that

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there was no one to encourage (reinforcement) the baby every time she tried to pronounce words. At three years, her baby only able to communicate very few words.

The contrary case reflects an absence of the attributes of reinforcement. The baby tried to pronounce words. However, B.B, was too busy to reinforce the behaviour. The study shows that B.B. concentrated on her schoolwork and failed to stimulate the development of her baby's language.

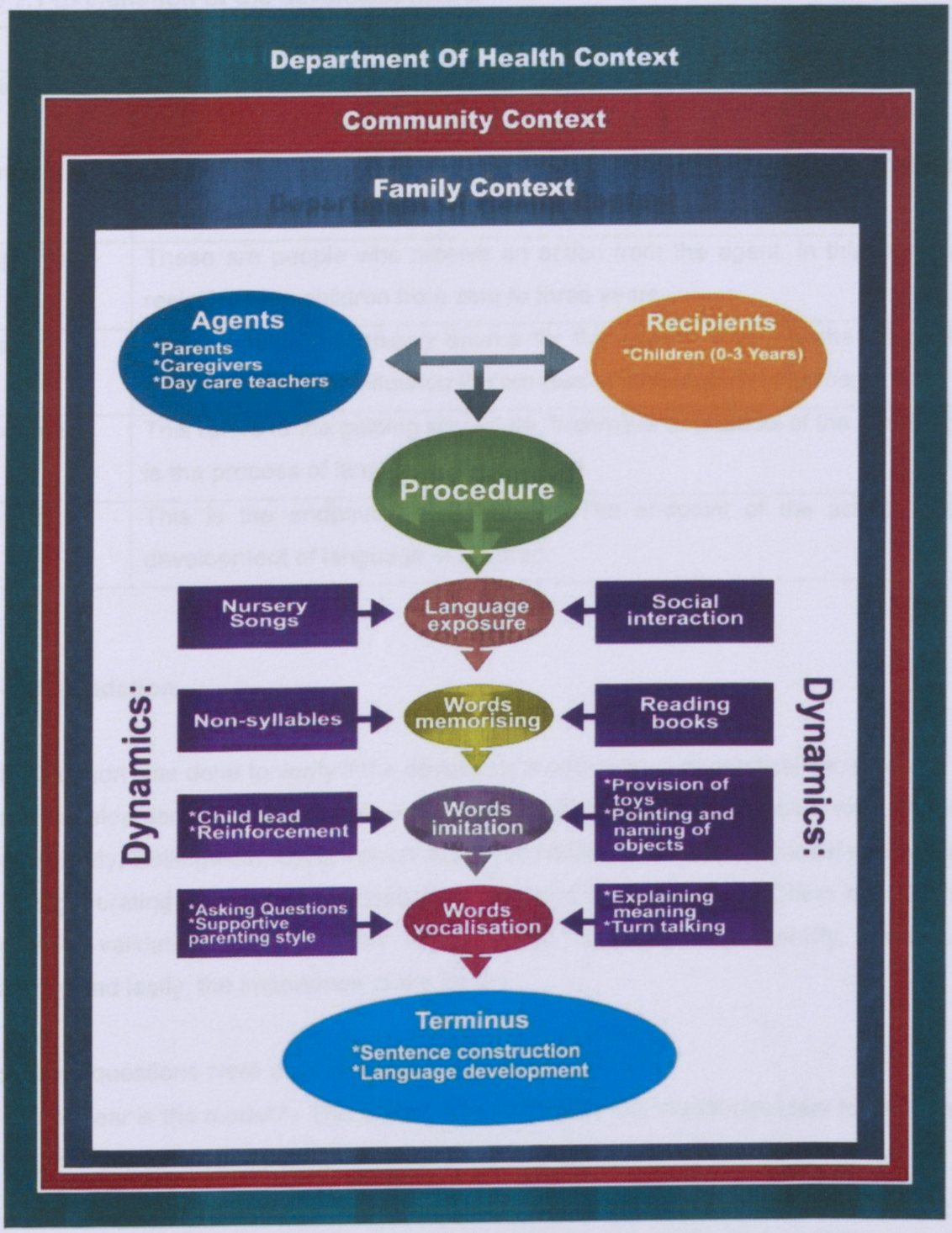
7.3. Model Development

Model development helps researchers to relate more with the reality around them. Powell and Comnaway (2004) defines a model as sketches, mathematical formula or diagrams which show a framework for analysis of a certain phenomenon. It is used to simplify, and it represents the real-world phenomenon. Models create a link between research and what is happening in society. Shafique and Mahmood (2010) argue that a model helps the researchers to describe, predict and understand complex phenomena or events. The researcher used the findings of the study to conceptualize a model to facilitate language acquisition in children between zero to three years. The researcher followed the six areas of Dickoff's framework (see Murphy, Williams & Pridmore, 2010), which are as follows:

- Agent – This is anyone who performs an activity.
- Recipients- These are people who receive an action from the agent.
- Context – This refers to the areas that can use the model.
- Dynamics- This refers to the energy source for the activity.
- Procedure- This refers to the guiding procedure, technique or protocol of the activity.
- Terminus- This is the endpoint of the activity.

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7.2.1 A model to facilitate language development on children between 0 to 3 years



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7.3.2 Explanation of the developed model

Table 7.1 Explanation of the developed model

Box	Box explanation
Context	Context – This refers to the areas that can use the model. In this study, the model can be useful in the department of health, community and family.
Agents	This is anyone who performs an activity. For the current study, the agents are parents, caregivers and day care teachers.
Recipients	These are people who receive an action from the agent. In this study, the recipients are children from zero to three years.
Dynamics	This refers to the energy source for the activity. This are the things that parents may do to influence the process of language development.
Procedure	This refers to the guiding procedure, technique or protocol of the activity, this is the process of language development.
Terminus	This is the endpoint of the activity. The endpoint of the activity is the development of language in children.

7.4 Model validation

Model evaluation was done to verify if the developed model relates to practical life, research and language development. Model validation was done to determines the applicability and usability of the model (Eddy, Hollingwoth, Caro, Tsevat, McDonald & Wong, 2012). The model was validated using the generating theory as explained by Chinn and Kramer (1995). Chinn and Kramer's strategies of validation which validate model clarity, simplicity and usability, applicability, accessibility and lastly, the importance of the model.

The following questions were used to validate the model:

- How clear is the model? - This question determined if the model was clear for the agents. It also helped assess the consistency of the model.
- How simple and usable is the model? – This question determined whether the model was simple to use and not too complex and confusing for the agents and readers,
- How applicable is the model? – This question assessed the application of the model. It checked if the model is applicable in real situations.

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- How accessible is the model? – This question looked at the concepts used in the model. It checked if the concept used could be justified and grounded through empirical phenomenon.
- How important is the model? - This question focused on the importance of the model and its ability to attain expected goals.

7.4.1 Methodology for model validation

7.4.1.1 Research Approach

A qualitative research approach was used to validate the model. The qualitative approach allowed the researcher to have in-depth interviews with participants (Greeff, 2005).

7.4.1.2 Research design

A qualitative explorative research design was used to validate the model. The main reason for conducting a qualitative study was to explore the usability and applicability of the model (Brynard & Hanekom, 2006).

7.4.1.3 Location of the study

The model was evaluated in Vhembe District. Vhembe District is comprised four local municipalities, namely Musina, Collins Chabane, Thulamela and Makhado. The District Municipal offices, as well as the Thulamela Local Municipality offices, are located in the town of Thohoyandou. Vhembe District covers a geographical area that is predominantly rural. It is a legendary cultural hub, and a catalyst for agricultural and tourism development.

7.4.1.4 Population and sampling

The drafted model was given to the two psychologists, two speech therapists and one parent to explore its usability and applicability. Purposive and accessibility sampling were used to sample participants for model evaluation. The language experts (psychologists and speech therapy) were selected purposively since the researcher was looking for people who were knowledgeable about language acquisition. I handpicked the potential individuals to be included in the sample based on my judgment. The selected individuals were judged to have certain special characteristics

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mainly that they could provide the most useful information for which the study was being done (Shaughnessy & Zechmeister, 1994). One participant who is a parent was selected depending on her accessibility.

7.4.1.5 Model instrument

An interview guide (see appendix 12) was used during data collection. The interview guide was developed using the evaluation theory as explained by Chinn and Kramer (1995). The interview guide which was developed in English was translated to Tshivenda. The researcher then translated back to English to ensure that the meaning of the questions was retained (Rubin & Babbie, 1993). The interview guide indicated the kind of questions which were to be covered in the interview (Breakwell, et al., 2006). This list of questions helped the researcher to remember the important questions that should be asked in the interview (Schweigert, 1994).

The research instrument consisted of two sections. Section one consisted of demographic information. Section two had five questions which focused on the clarity, simplicity and usability, accessibility, applicability and importance of the model (Greeff, 2005). The interview guide for model development was validated by the promoters of the study (Babbie & Mouton, 2012).

7.4.1.6 Data collection

The researcher used semi-structured interviews. According to Breakwell et al. (2006), in semi-structured interviews, the researcher has several topics to cover, but the precise questions and their order are not fixed. In semi-structured interviews, neither questions nor responses are predetermined. The interviewer obtains information about certain topics but was free to decide the content, wording and sequence of questions to ask respondents. They are particularly useful when little is known about the phenomenon being studied (Reid & Smith, 1981).

7.4.1.7 Data analysis

To analyze data, the researcher used thematic content analysis. Hoisti (in Shaughessy & Zechmeister, 1994) defines content analysis as a technique for making inferences by objectively identifying specific characteristics of messages. It may be used with any form of message, such as television and radio programs, speeches, films and interviews. The method is used to

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categorize a wide range of open-ended responses (Mitchel & Jolley, 1992). According to Krippendorf (in Richardson, 1996), content analysis is an approach to the study of the entire range of communicative and symbolic media, which includes verbal dialogues, films, advertisements, cartoons, and political speeches. From these, researchers seek to make inferences about other phenomena that are of interest.

7.4.2. Model validation findings

7.4.2.1 Demographic information of model validation participants

The table below illustrates the demographic information of the participants used to validate the model. Five participants were purposively and accidentally sampled to validate the applicability of the model. The sample size comprised five participants, made up of two psychologists, two speech therapists and one mother. The ages of the participants ranged from 29 to 40.

Table 7.2 Model validation participants' demographic information

Participant	Age	Role of the participants in the study	Level of education
Participant 1	36	Language specialist	Psychologist
Participant 2	40	Language specialist	Speech therapist
Participant 3	36	Language specialist	Speech therapist
Participant 3	29	Mother	Secondary School
Participant 5	34	Language specialist	Psychologist

7.4.2.2 Presentation of model findings

The following section presents the findings of the developed model. The findings are divided in to five themes, which explain the applicability of the model. These themes include the clarity of the developed model, the simplicity of the developed model, the applicability of the developed model, the accessibility of the developed model and, lastly, the importance of the model.

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7.4.2.2.1. The clarity of the developed model

The findings show that the model is clear and understandable. Participants indicated that the steps in the model are clear and that anyone can understand and follow them.

"*Yes, the model is clear and is easy to understand. Mmmm, it is very straight forward. This model shows all the steps that children should pass through as they learn language*". Participant 1

"*Well I think the model is very clear and straight forward. Any parent or caregiver can use it irrespective of their educational level. Parents from both rural and urban settlements can use it. It shows the steps in such a way that it makes it easy for a person to understand what is happening. I am sure that if parents follow the suggested activities, they can stimulate their children's language development easily and fast*". Participant 2

7.4.2.2.2. The simplicity and usability of the developed model

The findings of this study show that the model is simple to use. Participants further indicated that it can be used by anyone including those that are illiterate.

"*This model is very simple; it is not complex at all. Hence, I indicated that anyone can use if irrespective of their level of education. I also like the fact that the terms in the model are explained. This will help parents to understand what is expected of them. I also like the fact that the activities in the model are made up of things that most parents do, so it will be easy for them to understand the activities*". Participant 2

"*The model is not confusing at all; it is simple. I believe that parents and caregivers will be able to understand and use it. The terms are simple although two or three terms should be explained to parents. I think a translated version of the model can be very simple. I suggest that the model be translated to different languages. This will add to its simplicity*". Participant 3

7.4.2.2.3. The applicability of the model

The findings show that the model is applicable and can be used by mothers from both urban and rural areas.

"*I think that this model should be made known to the parents and more specifically to day care centers because most of the teachers in our crèches, especially in t rural villages, don't really know how to help a child develop language easily or faster. For example, the use of technology is not used in rural crèches, but in urban crèches children are exposed to technology. Technology is also important because it also stimulates the development of language easily and faster. I think that this model can be very useful especially in underdeveloped societies*". Participant 1

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"I think that this model is applicable. The stipulated activities are activities that parents already know and are using. The only things that most parents are not aware of are the steps that they can take if their children's language development is delayed. I like the fact that this model makes it clear that it will help parents a lot." Participant 5

7.4.2.2.4. The accessibility of the model

Participants indicated that the model is user friendly and that the concept used is clear and easy to understand. However, the results show that a one concept (which is reinforcement) should be defined to highlight its meaning.

"I think a few concepts, such as reinforcement, child lead and non-syllables, should be explained to parents before the model is given to them. However, I think those concepts will not be a problem to those who can read since they are explained in the model itself, but for those who are unable to read, it is vital that the concepts be explained to them". Participant 2

"*Most of words in the model are words that we use every day. We know them very well. Although there are some words that I do not know, I believe that when you explain them to me, it will be easy to understand them*". Participant 4

7.4.2.2.5. The importance of the model

The findings show that the model is important and that it will facilitate or stimulate the development of language. The participants further indicated that it is not all parents who know the activities that are necessary to influence language development and that the model will close that gap in knowledge.

"*The model is important. It will help parents very well. Parents will learn different activities that stimulate language development. If parents and caregivers follow the suggested activities, they will be able to stimulate their children's language development. As a speech therapist, I strongly agree that this model will be able to attain its goal, which is to stimulate language development. The activities that are in this model are the activities that we as speech therapists always suggest to parents. When they come for therapy, we encourage them to use those activities*". Participant 3.

"*The model is important. It is not all parents who know what to do to facilitate the development of their children. This model will expose parents to different activities and what they can do at home to facilitate language development in their children. It will also show them the steps required to help their children if their language is not developing well*". Participant 5

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7.5 Conclusion

Language expects were used to evaluate the applicability of the model, while the selected parent was used to check the simplicity of the developed model. The researcher concludes that the model is clear and simple, and that parents and caregivers can use it easily. The findings also show that the model can be used by parents from different settlements and different socio-economic backgrounds. The findings of model evaluation showed that the developed model is clear and understandable. Participants indicated that the users of the model will be able to understand it and to understand the words used. The findings also showed that the model is applicable to real life situation and it will be able to stimulate the language development on children. The concepts used in a model are well known concepts that most people understand. However, the findings show that one concept should be explained to parents to enhance their understanding of the model. It was indicated that the word reinforcement should be explained its meaning in the model. The word reinforcement was explained through concept analysis. The next and finial chapter presents summary of the study, limitations, recommendation and conclusion.

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CHAPTER 8: SUMMARY, LIMITATIONS, RECOMMENDATIONS AND CONCLUSION

8.1 Introduction

In this chapter, summary of findings, limitations encountered, recommendations and implications for future research are discussed at length. The summary is divided into five subthemes as follows: the importance of language development in children, activities that influence language development in children, environmental factors that influence language development in children, early childhood education in language development and, lastly, language disorders that are associated with language development in children.

8.2 Summary of the study

A qualitative explorative approach was used to investigate children's language development. The aim of this study was to develop a model that could be used by parents and caregivers to stimulate children's language development. The explorative design helped the research to explore different approaches to stimulate children's language development. The study was conducted in Vhembe District, Limpopo Province. Three villages, namely Ha-matsa, Tshikuwi and Tshirolwe were selected. The selected villages have several children who suffer from language disorders. Purposive sampling was used to select the most suitable participants for the study. The researcher used her judgement to select participants. A semi-structure interview guide with open-ended questions was used to address the objectives of the study. Data were collected in the participants' homes, using the language that the participants understood better. Collected data were later translated to English by and expert. To analyse the collected data, thematic content analysis was used. Themes and subthemes were used to explore and describe language development in children. The study was approved by the University of Venda higher degrees committee, and the following ethics were adhered to, informed consent, anonymity, confidentiality, voluntary participation, no harm to the participants and dissemination of results.

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The study was guided by universal grammar theory, learning theory. The aim of the current study was to develop a model that would enhance language acquisition in children. The study was guided by the following objectives: to explore the importance of language development in children; to describe activities that influence language development; to explore factors within the home that

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influence language development and to describe the disorders that are associated with language development.

Thirty participants were sampled to participate in the study. The sample comprised of 15 mothers and caregivers, five day-care teachers, five psychologists and five speech therapists. The study constituted of people with different levels of education. Two participants were illiterate, one had primary school education, nine secondary school education and eighteen had tertiary education. The ages of the participants ranged from 29 to 61.

The study concludes that language development in children is important. Language helps children to communicate with others and make friends. It is also used for educational purposes. The study also concludes that children who do not develop language experience challenges such as loneliness and isolation, inability to learn social skills, discrimination, failure to express themselves and low self-esteem. They also show self-destructive behaviour.

The research concludes that there are a variety of activities that parents can use to stimulate the language development of their children. Home environmental factors also emerged as an important factor in the stimulation of the children's language. Overall, the study concludes that, for the activities and home environmental factors to develop language, parents and caregivers must be actively involved. Lastly, the study concludes that there are disorders that are associated with the development of language. When children experience these disorders, they should be taken for language therapy and parents should also go for counselling. The findings of the current study reported that language disorders can be treated at home, schools and hospitals. The treatment is done by speech therapists, psychologists, pathologists and parents. Behaviour therapy is used to treat language disorders and parents should also get therapy since language disorders in their children also affects them. The findings of the study were used to develop a model to facilitate language development of children between 0 and 3 years.

8.2.1 Theme 1: The Importance of language development in children

This theme addressed the importance of language in children. The study was able to address this theme sufficiently. The study revealed that language is an important tool which is used to convey information from one person to the other. The study identified important factors to language development in children. The findings indicate that language helps children to communicate and

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relate with other people. Language was also explained as a tool which is used to educate children, either at school or at home. Moreover, the study shows that language helps children to express their feelings towards others. Lastly, the study shows that the development of language also stimulates cognitive development. The study shows that when children are learning language, they will also be stimulating their reasoning, thinking and problem-solving skills. In addition, it was also indicated that cognitive development reduces problems such as poor language development, a low self-esteem and isolation.

Challenges that children face when developing language were identified. The findings of this study revealed that children who do not develop language skills face a number of challenges such as loneliness and isolation, inability to learn, discrimination by other children, failure to express themselves and a low self-esteem. These children may also show self-destructive behaviour. The researcher argues that language development in children is important since it stimulates other cognitive skills which children require for social interaction and adjustment to their peers and the community.

The results of this study show that failure to develop language may lead to isolation and loneliness. It was indicated that children who are unable to use language usually play alone, have difficulties making friends and relating to others. Moreover, the study shows that children who are unable to communicate suffer from discrimination and are often bullied by those that can communicate. Because of this bullying, they isolate themselves from others. The study also shows that children who are unable to use language tend to exhibit self-destructive behaviour, are frustrated and angry towards other children who, in turn, isolate them.

The findings also show that language is used for educating children. The study also reveals that children who are unable to use language also experience problems in learning skills. These children have difficulties in learning norms, customs and children's games. Lastly, the study reveals that, due to feelings of inferiority, children who are unable to use language have a low self-esteem compared to those that can communicate.

8.2.2 Theme 2: Activities that influence language development in children

The objective that sought to identify the activities that influence language development was addressed successfully. The findings of this study show that there are a number of activities that

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can be used by caregivers and parents to foster the development of language in children. Moreover, all those identified activities stimulated children cognitively. This supports the argument that the development of language also stimulates cognitive development. However, although there are several activities that can be used to stimulate language development, these depend on the age of the child. The study discovered two categories of activities that can be used to foster language development, and these depend on the age of the child. The activities include activities that can be used with children below one year and activities that can be done with children between one year and three years.

Activities that can be used to foster language development in children less than one-year old

The findings of this study indicate that the most important activity that can be used by parents is communication. The findings reveal that children should be communicated with to help them to learn language. It is the duty of parents to expose children to either spoken or sign language. The study also reveals that it is important for parents to repeat the bubbling sounds that children produce (non-syllables) and to repeat the words that children try to pronounce (child lead). Parents should listen and try to correct the words that the children are pronouncing incorrectly. In contrast to this view, speech therapists who were interviewed indicated that parents should not try to correct the mistakes that children make since this might affect their confidence. Instead, they advise that parents should just repeat the words correctly.

The findings also show that nursery songs can also be used to foster the development of language in children. The repetition of words in nursery songs familiarises children with the words in the song and this makes it easy for children to learn such songs. Furthermore, the study reveals that pointing to objects and reading books are also important for stimulating children's language development.

Activities that influence language development in children from one year to three years

As indicated above, the activities that influence language differ according to the age of the child. The study identified several activities that can foster language development in children who are between one year and three years.

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The findings of this study show that colourful toys can be used to foster language development. The study indicates that toys resemble real objects and will help the children to learn the names of these objects. The usage of colourful objects attracts the attention of children, and this also introduces the children to colours. Pictures can also be used to stimulate language. Pointing to and naming pictures also familiarizes children with their environment. However, since this activity is used for children who are more than one year old, the findings show that it is important that parents do not only point to and name the objects, but that they should also explain the purpose of that object. This will help the children learn what the objects are used for.

Apart from the activities mentioned above, turn talking also emerged as a language stimulating activity. Turn talking takes place when parents talk to and listen to their children to respond to what the children are trying to communicate. In addition, when parents turn talk with their children, they should use sentences rather than words. The study reveals that talking in sentences when communicating with children exposes them (children) to opportunities that would help them use words to appropriately.

8.2.3 Theme 3: Environmental factors that influence language development in children

The objective that sought to identify the environmental factors that influence language development was addressed. The findings reveal that it is important for parents to create a language stimulating home environment. A stimulating environment fosters language development in children. The study identified several environmental factors that can be used to foster the development of language in children. The following environmental factors were identified in the study: communication, parental level of education, home socioeconomic status, caregiver's personality and the availability of other children in the family.

The findings show that a language stimulating environment is an environment where communication takes place. When parents and caregivers communicate with children, it helps them to learn language. It was further found that, even when children have toys and books, it is still important for parents to communicate with their children. The study reveals that availability of books and toys without communication does not foster language development. The study also found that the educational level of parents and the socioeconomic status of the household plays a role in children's language development. It was revealed that parents with high levels of

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education and those from high socio-economic backgrounds are more likely to expose their children to a language stimulating environment.

The study also reveals that parental personality is also important in the development of children's language. The study findings show that a supportive, reinforcing and motivating parent fosters the development of language in children. The findings also show that it is important for parents to be patient when they help children learn language. Lastly, the availability of other children in the family was also identified as an important factor in language development. The findings show that children also learn language while playing with other children, either at home or day care centres.

8.2.4 Theme 4: Early childhood education on language development

The findings of this study show that early childhood education helps children to learn about their surroundings. In addition, it was found to foster children's mental, physical, emotional and language development. The findings of this study show that children who are exposed to early childhood education learn language at a very young age and they learn many words within a short period of time. It was found that children who are exposed to early childhood education at day care centres are exposed to other children, hence they learn many words from their peers. In addition, the study also reveals that early childhood education also helps children to learn social skills, norms and values of the community. Lastly, the findings show that early childhood education helps children to be comfortable with the learning environment; it makes them perceive learning as fun and not scary. The study addressed the objective on early childhood education successfully.

8.2.5 Theme 5: Language disorders that are associated with language development in children

The last theme in this study addressed the objective on the language disorders that are associated with language development in children. The study was able to successfully address this objective. The findings of this study show that there are many disorders that may affect the development of language in children. The findings reveal that such disorders may affect the ability of a child to communicate. They may delay communication and can have a negative effect on vocabulary or sentence construction. The language disorders that the study identified include expressive language disorder (inability to share thoughts, ideas, and feelings) dyslexia (a language disorder

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in which children have difficulties explaining symbols and pictures), and inability to understand spoken language (receptive disorder language disorder). Apart from language disorders that affect the development of language, the study also shows that there are speech disorders that affect the development of language. These include lisps (a speech disorder that affects the pronunciation of certain words) and stuttering (a speech disorder in which children repeat either letters or words when they are talking).

The study also revealed that language development may be affected by psychological disorders such as mental retardation and autistic disorder. Children with such disorders find it difficult to process words and this makes it difficult for them to learn words. Lastly, medical conditions such as cerebral palsy and a low Apgar score were also found to have an impact on the development of language in children. However, the study also reveals that these disorders may be treated. The treatment is done at a hospital by a speech therapist. In addition to the treatment, the study also reveals that it is also important for parents to find psychological counselling to help them accept the condition of their children.

8.3 Limitations of the study

- Only Tshivenda speaking mothers and caregivers were used and this limits the knowledge and activities used by mothers from other ethnic groups.
- Omission of occupation of parents in the demographic profiles of the participants was also a limitation to this study. The researcher was not able to find out if the different occupations of parents resulted in different ways being used to foster the development of language in children.

8.4 Recommendations and implementation for future research

Based on the findings of this study, the following recommendations and implementation for future studies are made:

Recommendation for practice which are directed to the Department of Health

- The study findings show that language development is important to children and that it affects the children's education. However, parents in rural areas are not aware that language should be stimulated, and that there are activities that they (parents) can use to

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stimulate children's language development. As a result, the study recommends that the Department of Health, through speech therapists, may do campaigns to educate mothers and the community about the different activities that influence the development of language of their children.

- The study findings show that there are language disorders that can affect language development in children. The researcher concludes that parents and caregivers are not aware of the disorders associated with children's language development. The study, therefore, recommends that the Department of Health, through psychologists, may carry out awareness campaigns to help educate parents and caregivers about language disorders and their treatment. This will reduce the problem of language disorders faced by children in rural communities.
- The findings related to the first objective of this study show that language development is important, and that parents and caregivers are important tools for stimulating language development. The study recommends that the Department of Health may introduce language development pamphlets and campaigns at clinics since most parents have access clinics. This will inform parents about the importance of language in children and the activities parents can do to stimulate language development.

Recommendation for policy markers which are directed to the department of Education

- The findings show that early childhood education is vital in the development of language in children. The researcher recommends that the Department of Education through Early Childhood Development Centers (Creches and kindergartens) should have a policy on language development that is incorporated into the curriculum.
- The findings of this study show that home environmental factors are important for stimulating language development. Because of this outcome, the researcher recommends that the Department of Education should fund creches and kindergartens. This will help those institutions to create a stimulating environment for children.
- The Department of Education should support language development campaign programmes and research on language development/acquisition.

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Implementation for future research

- The purpose of this study was to develop a model to facilitate the development of children's language. The researcher recommends that another study should be done to evaluate the developed model.
- The current study only concentrated on Tshivenda speaking parents and caregivers from rural areas. The researcher thinks that parents and caregivers of other ethnic groups and those from urban areas might be using different strategies to influence the language development of their children. Because of this assumption, the researcher suggests that similar studies involving mothers and caregivers from other ethnic groups and from urban areas be done.
- This study was qualitative in nature. Therefore, findings cannot be generalized to the entire population. The researcher recommends that a quantitative study should be done to get the overall picture of the activities used by parents and caregivers to stimulate the development of their children's language.
- Only 15 mothers, five caregivers, five psychologists and five speech therapists were selected for the current study. A similar study, in which more participants should be used, is recommended to have a broader understanding of language development.
- The current study did not focus on finding out if the model developed can be used for both boy and girls. Therefore, the researcher recommends that a study should be done to assess if the developed model stimulates language differently in children of a different gender.
- The literature review revealed that there are few peer reviewed studies on language development in rural areas. The researcher recommends that more studies must be done on language development especially in rural areas.

8.5 Conclusions

This chapter summarised the methodology used and the findings of the study. It also covers the limitation of the study, and recommendation were made based on the study findings. The recommendations were addressed to policy makers and different government departments.

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9. APPENDICES

APPENDIX 1: REQUEST FOR PERMISSION TO CONDUCT THE STUDY (ENGLISH VERSION)

To participants

I am a PhD student at university of Venda. I am conducting a study on the model to facilitate language acquisition/ development in children between 0 to 3 years in the rural communities of Makhado Municipality, Limpopo province. You are requested to participate in the study.

Please understand that you are not being forced to take part in this study. The choice whether to participate or not is yours entirely. I would really appreciate it if you do share your thoughts with me. If you choose not to take part in the study, you will not be affected in any way, whatsoever. If you agree to participate, and then change your mind, you may discontinue at any time and tell me that you do not want to continue with the interview. I will not record your name anywhere on the interview guide, and no one will be able to link you to the answers you give. Only the researcher will have access to linked information. The information will remain confidential.

Your cooperation is highly appreciated

Yours faithfully

....

Madzhie Mpho Date

Researcher

....

Prof Mashamba T.M. Date

Supervisor

....

Dr Takalani F.J. Date

Co- Supervisor

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APPENDIX 2: REQUEST FOR PERMISSION TO CONDUCT THE STUDY (TSHIVENDA VERSION)

Kha vhafhinduli

Ndi mutshudeni a khou itaho masters gudedzini la nntha la Venda. Ndi khou ita thoduluso ya u to da uita model une wa do thusa u gudisa vhana vha nwaha muthihi uya kha miraru luambo. Ndi khou vhahumbela uri vha dzhenelele kha thoduloso iyo.

Ndi vha divhadza uri a vha khombetshedzwi u vha tshipinda tsha ino tshedzuluso, vhone vhane vha thou nanga u vha tshipida tshaino tsedzuluso. Fhedzi ndi do zwitakalela arali vha tshinga tenda u mbudza ndivho ine vha vha nayo malugana na vhulwadze u vhu. Fhedzi vha sa zwitakaleli a huna tsho khakheaho. Hone kharali vha khou zwitakalela ri tshiswika vhukathi vhapfa vha si tsha zwi takalela u isa phanda vhaya mbudza uri vha nga si tsha isa phanda na tsedzuluso iyi. Ndi nga si do nwala madzina a vho fhethu a huna muthu ane a do kona u tumana zwe vhaamba na madzina a vho. Ndi nne ndi ndothe a ne a do divha madzina avho. Madzina a vho a do dzula a a tshipiri.
U dzhenelela ha vho ndi zwa ndeme

Wavho a fulufhedzeaho

.....

Madzhie Mpho
Mutodulusi

.....
Date

.....

Prof Mashamba T.M.
Supervisor

.....
Date

.....

Dr Takalani F.J.
Co- Supervisor

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APPENDIX 3: INFORMATION SHEET (ENGLISH VERSION)

This study is about a model to facilitate language acquisition/ development in children between 0 to 3 years in the rural communities of Makhado Municipality, Limpopo Province.

The study will benefit children, parents and caregivers, rural communities, speech/language therapists and developmental psychologists, the Department of Education and language policy developers. The study focuses on the factors that enhance the development of language in children. As indicated above, the study will come up with methods that can be used by mothers in Makhado Municipality to enhance the development of their children's language. The study aims to enhance the language development of children in Makhado Municipality.

The study seeks to develop a model that will enhance language acquisition in children. study will be guided by the following objectives: To explore the importance of language development in children; To explore factors within the home that influence language development; To describe activities that influence language development; To describe the disorders that are associated with language development; and To develop a model that will assist parents to facilitate children's language development.

If you decide to participate in this study, your participation will be kept confidential, and private. However, the findings of this study will be made available to the public to read but your names will not be mentioned. If you decide to participate in this study, it should be voluntary. You are free to withdraw your consent at any time without fear of victimization

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APPENDIX 4: INFORMATION SHEET (TSHIVENDA VERSION)

Tshedzuluso heyi ndi nga u todulusa nga ha zwithu zwine zwanga thusa uri vhana vha tavhanye u guda luambo, ho sedziwa vhana vha u thoma kha 0 uya kha minwaha miraru. Thoduluso ino I khouu itiwa kha masipala wa Makhado une wa wanala Limpopo Province. Thoduluso ino I do vhuyedza vhathu vhanzi sa vhana, vhabebi, vhathogomeli vha vhana, na vhadivhi vha zwa luambo. Thodzuluso iyi I do kha zwithu zwi ne zwa tutuwedza vhana u guda luambo. Thoduluso iyi I do veledza zwithu zwine vhabebi vhanga ita u itela u tutuwedza vhana u guda luambo. Tsedzuluso iyi yo sedza kha u tutuwedza vhana u tavhanya u guda u amba.

Mveledziso iyi I do sedzulusa zwitevhelaho: vhuleme ha luambo kha vhana; zwithu zwine zwa nga vha hone hayani zwa thusa u tutuwedza vhana u guda luambo; u to du lusa zwithu zwine zwinga itiwa nga vhabebi u tutuwedza vhana u guda luambo ya do vha hafhu ya todulusa malwadze a khakhisaho vhana musi vha khou guda luambo.

Arali vha tshi takalela u vha tshipida tsha thoduluso iyi, u dzhenelela havho a zwinga divhiwi nga vhanwe vhathu, na zwine vha do fhindula kha mbudziso dzine nda do vha vhudzisa dzine zwi dovha tshipiri tshanga na vhone. Hone ha, mawanwa a tsedzuluso ino a do vhalwa nga tshitshavha, hone dzina lavho a linga buliwi kha mawanwa a yo. U vha tshipida tsha tsedzuluso ino a zwi kombetshedzwi muthu.

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APPENDIX 5: CONSENT LETTER (ENGLISH VERSION)

To participants

I am a PhD student at the University of Venda. My study focusing on developing a model to facilitate language acquisition/ development in children between 0 to 3 years in the rural communities of Makhado Municipality, Limpopo province.

You are requested to participate in the study.

Please understand that you are not being forced to take part in this study and the choice whether to participate or not is yours entirely. I would really appreciate it if you do share your thoughts with me. If you choose not to take part in answering these questions, you will not be affected in any way whatsoever. If you agree to participate, and then change your mind, you may discontinue at any time and tell me that you do not want to continue with the interview. I will not record your name anywhere on the interview guide and no one will be able to link you to the answers you give. Only the researcher will have access to linked information. The information will remain confidential.

Your cooperation is highly appreciated

Yours faithfully

....

Madzhie Mpho Date

Researcher

....

Prof Mashamba T.M. Date

Supervisor

....

Dr Takalani F.J. Date

Co- Supervisor

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APPENDIX 6: CONSENT LETTER (TSHIVENDA VERSION)

Kha muvhudziswa

Ndi mutshudeni wa gudedzini la ntha la Venda. Ndi khou todulusa nga ha zwithu zwine zwa nga thusa vhana u guda luambo nga u tavhanya. Thoduluso iyi yo sedza vhana vha u va kha 0 uya kha minwaha miraru, vha no wanala kha vhupo ha mahayi, kha musipala wa Makhado ure Limpopo Province.

Vha khou humbelwa uri vha dzhenelele kha thoduluyo yo bulwaho a fho ntha. Hone ha a vha pfesese uri u vha kombetshedziwi u vha tshipida tsha tshedzuluso iyi. U dzhenelela havho kha thoduluso iyi zwi va kha vhone vhane. Na ho arali huna inwe ya mbudziso ine a vha ipfesesi kana a vha takaleli u I fhindula vho tendeliwa u sa I fhindula. Arali vha tenda u vha tshipida tsha ino tsedzuluso fhedzi ri vhukati na mbudziso vhapfa vha sa tsha toda u I sa phanda vho tendeliwa u litsha vha si tsha I sa phanda.

Dzina lavho a linga do nwaliwa kha mawanwa a thoduluso iyi. Hafho a huna na muthu na muthihi ane a do kona u zwi divha uri mawanwa a ya a va kha vhone. Ndi nne ndi ndothe ane a do vha a tshi kona u zwidivha uri vhone vho vha tshipida tsha mawanwa a ya. Zwothe zwine vha do zwi amba zwi do vha tshipiri tshanga na vhone.

U dzhelelela havho nda thoduluso iyi ndi zwa ndeme.

....

Madzhie Mpho Date

Researcher

....

Prof Mashamba T.M. Date

Supervisor

....

Dr Takalani F.J. Date

Co- Supervisor

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APPENDIX 7: CONSENT FORM (ENGLISH VERSION)

I.....hereby consent to participate in a research study entitled "a model to facilitate language acquisition/ development in children between 0 to 3 years in the rural communities of Makhado Municipality, Limpopo province" I understand that I am participating freely and without being forced in any way to do so. I also understand that I can stop this interview at any point in time should I want to discontinue. The conditions of the study have been fully explained to me and I fully understand the circumstances of my participation.

....

Signature of participant date

....

Signature of researcher date

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APPENDIX 8: CONSENT FORM (TSHIVENDA VERSION)

Nne ..... Ndi khou tenda u vha tshipida tsha ngudo ya nga ha u thoma model u ne wa do thusa vhanna vha vhukati ha nwaha na minwaha miraru u amba, Makhado Municipality, Limpopo province. Ndi khou pfesesa uri a thi kombetshedziwi u vha tshipda tsha ngundo iyi. Ndi a pfesesa uri tshifhinga tshinwe na tshinwe nda pfa uri thi tsha toda u isa phanda na u vha tshipida tsha ngudo iyi ndo tendeliwa u litsha, hafhu thi kombetshedziwi u fhindula mbudziso dzothe. Ndo talutshedziwa nga ha ngudo iti nga vhudalo.

....

Signature of participant date

....

Signature of researcher date

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APPENDIX 9: INTERVIEW GUIDE (ENGLISH VERSION)

Section 1: Demographic information

1. Age of the participant
2. number of children raised
3. Position of a participant in a research
4. Level of education

Section 2: Research questions

1. What is the importance of language in children?
   - What is language?
   - Why it is important for children to learn language?
2. What are the factors that can influence language development in children?
   - What activities do you do to influence language development in children?
   - What home environment factors do you think influence language development in children?
3. What the importance of early childhood education on language development in child?
4. What disorders are associated with language development in infants?
   - What is language disorder?
   - What disorders are associated with language development in infants?
   - What are the disorders or conditions that can hinder language development?

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APPENDIX 10: INTERVIEW GUIDE (TSHIVENDA VERSION)

Section 1

1. Minwaha ya mubebi
2. Mbalo ya vhana ye vha vha alusa
3. Vhu I mo kha ngudo iyi
4. Tshikolo

Section 2

1. Ndi vhufhio vhundeme ha luambo?
    - Luambo ndi mini?
    - Ndi vhufhio vhundeme ha luambo?
2. Ndi zwithu de zwine vha nga ita u itela uri vhana vha gude luambo u tavhanya?
    - Ndi zwithu de zwine vha nga ita u itela uri vhana vha gude luambo?
    - Ndi zwifho zwine zwa nga wanala hayani zwine zwa nga thusa vhana u guda luambo?
4. Ndi ngani u tavhanya u gudisa vhana luambo zwi zwa ndeme?
5. Ndi afhio malwadze a yelanaho na mveledziso ya luambo kha vhana?
    - Malwadze a luambo zwi amba mini?
    - Ndi afhio malwadze a yelanaho na mveledziso ya luambo kha vhana?
    - Ndi a fhio malwadze a thithisaho u guda ha luambo?

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APPENDIX 11: INTERVIEW GUIDE FOR MODEL EVALUATION (ENGLISH VERSION)

Section 1: Demographic information

1. Age of the participant
2. Position of a participant in a research
3. Level of education

Section 2: Model evaluation questions

1. How clear is the model? - This question evaluated if the model is clear to the agents, it also assesses the consistency of the model.
2. How simple is the model? – This question determined if the model is too complex for agents and if it is confusing for readers.
3. How general is the model? – This question assesses the application of the model, it checked if the model is applicable in real situation.
4. How accessible is the model? – This question looks at the concepts used in the model, it checks if the concept used might be justified and grounded through empirical phenomenon.
5. How important is the model? - This question focuses on the importance of the model and its ability to attain expected goals.

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APPENDIX 12: INTERVIEW GUIDE FOR MODEL EVALUATION (TSHIVENDA VERSION)

Section 1

1. Minwaha ya muvhudziswa
2. Vhuimo ha muvhudziswa kha thoduluso ino
3. Tshikolo

Section 2

1. Mawanwa a ya a ya pfesesea naa?
2. Mawanwa aya a ya tevhelele a na?
3. A ya manwana a nga kona u shumisiwa nga vhanwe vhathu naa?
4. Maipfi o shumiswaho kha mawanwa aya a ya pfesesea naa?
5. Mawanwa a ya ndi a ndeme nga ndila de?

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APPENDIX 13: FEEDBACK INFORMATION SHEET (ENGLISH VERSION)

To participants

I am a PhD student at the University of Venda. My study focusing on developing a model to facilitate language acquisition/ development in children between 0 to 3 years in the rural communities of Makhado Municipality, Limpopo province

This feedback information sheet serves to inform you that after collection and analysis of the collected data I will consult you for verification of the presented data before I publish the collected data. You also need to be aware that after the completion of the present study you will be given the overall findings of this study and in addition you will also receive the developed model which will help you to foster the development of language of your children.

Yours faithfully

....

Madzhie Mpho Date

Researcher

....

Prof Mashamba T.M. Date

Supervisor

....

Dr Takalani F.J. Date

Co- Supervisor

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APPENDIX 14: FEEDBACK INFORMATION SHEET (TSHIVENDA VERSION)

Kha muvhudziswa

Ndi mutshudeni wa gudedzini la ntha la Venda. Ndi khou todulusa nga ha zwithu zwine zwa nga thusa vhana u guda luambo nga u tavhanya. Thoduluso iyi yo sedza vhana vha u va kha 0 uya kha minwaha miraru, vha no wanala kha vhupo ha mahayi, kha musipala wa Makhado ure Limpopo Province.

Ndi tama u vha vhudza na u vha di vhadza uri musi hono fhedzwa u kuvhanganwa ma manwa a thoduluso ino. Ndi do da nda vha kwama hu u I tela u vha vhalela mawanwa o the o fhelelaho uri vha kone u tendelana nao kana u a hanedza phanda ha musi ndi sa a thu a isa kha lushaka. Vha do vhe vhadivhe uri musi ndo no fhedza u nwala mawanwa aya, ndi sa athu a I sa kha lushaka ndi do vha disela one.

Wavho a fulufhedzeaho

....

Madzhie Mpho Date

Researcher

....

Prof Mashamba T.M. Date

Supervisor

....

Dr Takalani F.J. Date

Co- Supervisor

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