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Caregivers' perspectives of a linguistically and contextually adapted early childhood developmental milestone guide for children (birth to 3 years 11 months)

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Caregivers' perspectives of a linguistically and contextually adapted early childhood developmental milestone guide (birth to 3 years 11 months)

Abstract

Objective: This study aimed to determine the perspectives of caregivers of young children (birth to 3 years 11 months) regarding an international developmental milestone guide, recently contextually and linguistically adapted for South African families from low-resourced contexts.

Method: A mixed method research design with both qualitative and quantitative aspects were employed. A semi-structured interview was conducted using an interview schedule which had open-ended questions in order to gain insight on the perspectives of caregivers and closed-ended questions. A pilot study with three participants was conducted to refine the interview schedule prior to data collection. The perceptions of 18 caregivers of children aged between birth to 3 years 11 months were analysed using thematic analysis. Quantitative aspects were analysed using descriptive statistics.

Results: The majority of the themes derived from the caregivers' feedback demonstrated that the adapted developmental milestone guide was helpful and supportive of developmental literacy. Based on participant feedback, 7 of the 46 items in the adapted developmental milestone guide were further amended, and an additional domain on feeding skills was added. Four themes were identified from the participants' responses to the guide, including accessibility, linguistic complexity and diversity, developmental literacy, and contextual relevance. All the participants indicated that they want access to the guide.

Conclusion:

The recently adapted developmental milestone guide for the South African context was reported to be relevant and to promote developmental literacy among caregivers of very young children. Further adjustments will be made based on the caregivers' perspectives to the linguistic complexity in order to make the adapted developmental milestone guide more comprehensible.

Key words:

Developmental literacy, early childhood development (ECD), adapted developmental milestone guide, caregiver's perspective, linguistic and contextual relevance.

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DECLARATION

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Degree: BA Speech-Language Pathology

I declare that this research report is my own original work. Where secondary material is used, this has been carefully acknowledged and referenced in accordance with university requirements.

I understand what plagiarism is and am aware of the University of Pretoria's policy in this regard.



SIGNATURE

15/10/2024

DATE

1. Introduction

Speech language- therapists recognize that caregivers are key stakeholders and facilitators of early childhood development (ECD) for their children (World Health Organization [WHO], 2019). The caregivers interact extensively with their children and are best equipped to respond to their children's wants, needs, development, strengths, and weaknesses (Black, 2017). Since they are the primary stakeholders, they may benefit from resources that inform them about the health and general development of their children (Karasik & Robinson,

2022). The caregivers have expressed their desire for developmental literacy to be supported through resources to guide them in nurturing their child's development (Ayob et al., 2021). Despite developmental resources becoming more available, many resources are not applicable to the South African context and other low- and middle-income countries (LMIC; Sajady et al., 2018). Additionally, many researchers do not consider the opinions of caregivers when developing resources, although it is primarily made for their use (Sajady et al., 2018). It is therefore important for health care professionals to enquire about what the caregivers' perspectives are, based on developmental resources that are available and its proposed adaptations. It is also important to determine the perspectives of caregivers of young children regarding a developmental milestone guide made to support the needs of South African families, in low-resourced contexts.

There is a direct correlation between primary caregivers' developmental literacy and ECD outcomes (Ohonba et al., 2018). Developmental literacy encapsulates caregivers' knowledge of typical ECD which in turn allows for linguistically and contextually appropriate stimulation to be provided, and possible developmental disorders to be identified early on (Brown et al., 2020). Access to relevant resources facilitates developmental literacy which will in turn improve ECD and later academic outcomes (Balton et al., 2019). According to a study conducted in South Africa, caregivers struggle to access developmental milestone resources and therefore resort to alternative, generalised sources of information, such as the television or internet (Pioreschi et al., 2020). In South Africa, the only nationally implemented resource to increase developmental literacy is 'The Road to Health Booklet' (RTHB). The RTHB is a tool applicable from birth to 5 years and informs caregivers about the care children require, to develop optimally (Department of Health South Africa, 2020). The tool, however, does not target all areas of development extensively (Pioreschi et al., 2020). There are more comprehensive international developmental tools that are available, but a way to respond to the gap in developmental resources is to adapt it for the context it will be implemented in. Although the developmental tools that are created in HICs are psychometrically valid, they are not culturally and linguistically applicable to the South African context. Child development is highly influenced by sociocultural factors, hence it is important to take into consideration contextual factors when using a tool to monitor the development in children (Abessa et al., 2016). Therefore, it is important to gain the perspectives of caregivers on an adapted developmental milestone guide which takes into account the unique sociocultural factors of South Africa.

Populations in LMICs are at risk for poorer developmental outcomes due to various biological and environmental risks such as a lack of ECD support, however these can be

ameliorated through appropriate developmental literacy from caregivers (Donald et al., 2019). There are numerous factors that are prevalent in LMICs that pose a biological or environmental risk to age-appropriate attainment of developmental milestones (Sania et al., 2019). Biological risk factors include prematurity and low birth weight which have an impact on the neurodevelopment of children (UNICEF et al., 2023). Environmental risk factors include poverty and a lack of access to basic amenities (e.g. electricity, running water, sanitation) and competent developmental screening and monitoring services at clinics (Sania et al., 2018; Abdoola, 2021). Impoverished conditions are considered to be a risk factor to childhood development which places optimal ECD under threat. Therefore, ECD needs to be prioritised in LMICs to maximise developmental outcomes in children (Golinkoff, 2019). It is important to support the caregiver's knowledge as they are central in their children's development. This can be achieved by gaining their perspective on a linguistically and contextually adapted early childhood developmental milestone guide to determine whether the milestone guide is supporting their knowledge.

Caregivers need appropriate resources to support their developmental literacy (Moonsamy & Tayob, 2018). Resources accessed through broad sources, like the internet, are typically not applicable to use in the South African context due to globalisation and lack of contextual applicability (Sajady et al., 2018). The global prioritisation of ECD has resulted in the Nurturing Care Framework (NCF) being adopted by South Africa in the form of the Side-by-Side campaign which is central to the National Department of Health (Side by side, 2020). The Side by side campaign fosters the developmental literacy of caregivers to nurture ECD (Side by Side, 2020). Responsive caregiving is a core pillar in the Side-by-Side campaign hence it is important to augment the information already available and ameliorate the gap that exists in developing a milestone guide that takes caregivers' perspectives into consideration. An adapted ECD milestone guide is paramount in LMICs where contextually relevant resources are lacking (Black, 2017).

As caregivers play a role in the development of children, it is vital to consider; will caregivers deem the adapted developmental milestone guide to be contextually and linguistically appropriate to aid them in providing nurturing care for the development of children?

2. Method

2.1 Aim

This study aimed to determine the perspectives of caregivers of young children (birth to 3 years 11 months) regarding an international developmental milestone guide, recently contextually and linguistically adapted for South African families from low-resourced contexts. The variables that have been evaluated in the study in terms of contextualisation, include linguistic accessibility, dissemination, perspectives of caregivers regarding the accuracy and format of the adapted developmental milestone guide and accessibility to the materials in their immediate environment. Linguistic accessibility ensures presentation of the guide in a language that is most accessible to caregivers (Hepburn et al., 2024). Dissemination refers to obtaining the caregivers perspectives regarding the usability of the milestone guide as well as distributing the milestone guide in a selected mode they would prefer to receive the milestone guide in (Fernald et al., 2017).

2.2 Research Design

The research design additionally included a mixed method with both qualitative and quantitative aspects, namely likert scales. A descriptive qualitative interview schedule with an emphasis on phenomenology was also used as it provided insight into the perspectives of caregivers regarding the adapted developmental milestone guide (Brink et al., 2018). A feature of the research design is that the findings are specific to the context in which the research is conducted.

2.3 Ethical considerations

Ethical considerations are important in both qualitative and quantitative research. Ethical clearance has been obtained from the Research Ethics Committee of the Department of Speech-Language Pathology and Audiology on the 29th of February 2024 (Appendix A; Leedy & Ormrod, 2015).

2.3.1 Permission

It is essential to obtain permission in order to ensure the targeted school is aware of what the study entails, how it will be conducted and to access the caregivers. The schools liaised with those interested in the study and ensured the autonomy of participants. Permission to give a presentation about multilingualism and ECD as well as conduct the research study at Tiny Hearts pre-primary and Confidence College Kidicol was obtained from the respective principals (Appendices B and C).

2.3.2 Informed consent

It is important to obtain informed consent to ensure the respective participants are able to make an informed decision about voluntarily participating in the study. Informed consent for

the interview was obtained by providing the caregivers of infants aged from birth to 3 years 11 months of age with a written consent form (Appendix E and F). In the event that participants were unable to understand or read the English consent form, verbal consent was obtained using a language which was commonly spoken and understood by both the researcher and the participant such as Northern Sotho, isiZulu, Afrikaans, isiNdebele, Southern Sotho, siSwati, Setswana.

2.3.3 Confidentiality & data storage

Confidentiality is important in order to protect the identity of participants. The privacy of participants was protected by means of implementing the principle of confidentiality (Leedy & Ormrod, 2015). Confidentiality was ensured by only the researchers and supervisors being able to identify the participants by their code. The results were presented in a manner that ensured the caregivers remain anonymous. Participants were designated a label as an identifier, e.g. Participant A, but no other additional personal information other than the information given in the interview was used (O'Brien et al., 2018). Anonymised data was stored on a password protected computer only accessible to the research group and supervisors which will be stored at the University of Pretoria's online Research Repository for 10 years, as per policy at the University of Pretoria. The hard copy data of all the participants' records (interview schedule that each participant has completed and transcriptions thereof) will be stored in room 3-4 at the Department of Speech-Language Pathology and Audiology at the University of Pretoria for a minimum of 10 years.

2.3.4 Scientific integrity

Participants and the scientific community were protected by preserving scientific knowledge. This was established by ensuring that no plagiarism, the fabrication, and falsification of information occurred in the study (Brink et al., 2018). Referencing and citation guidelines from the American Psychological Association 7th edition were adhered to in the study. The researchers ensured that the information contained in the study was not another individual's ideas that are presented as their own (Kretser et al., 2019). Fabrication and falsification were avoided as the researchers collected and analysed the data from the study and did not invent their own (Brink et al., 2018). The researchers maintained objectivity and did not manipulate the research design to influence the objective interpretation of the research results. A standard was maintained by the interviewers adhering to the interview questions as well as the prompts without adding or removing information. They fulfilled their responsibilities in the research process.

2.3.5 Non-maleficence

This involved doing no harm, which involved the researchers avoiding harm or injury to the participants (Varkey, 2021). The researchers involved in the study conducted themselves in a professional manner. Caregivers were provided with a milestone guide and presentation pertaining to multilingualism. In the event that a caregiver raised a concern regarding their children's development, they were provided with information about facilities they can consult. For example, the Clinic for High-Risk Infants and Babies at the University of Pretoria, Skinner Clinic (in the catchment area) or a private facility (Speech Therapists Mgwanya & Partners Inc at a Louis Pasteur Private Hospital).

2.3.6 *Beneficence*

The researchers acted in a manner that benefited the participants and ensured that they were not exposed to any harmful conditions during the interview as well as during the presentation (Varkey, 2021). The participants benefited by receiving information to support their children's development, from the milestone guide as well as from the presentation pertaining to multilingualism and ECD that they attended. They were additionally provided with the platform to openly discuss any concerns and questions related to their children's development which were addressed by the researchers.

2.3.7 *Autonomy*

The researchers applied the principle of autonomy by ensuring the participants' voluntary participation by providing all the information so that they could make a well-informed decision, protect their confidential information, obtain consent, respect their privacy, and maintain honesty (Varkey, 2020).

2.4 *Setting*

The study was conducted at two ECD centres in Pretoria central business district (CBD). The schools are located in Theresapark, Akasia district in the north-west of Pretoria central business district (CBD) in Gauteng, South Africa which is a low-to-middle income area with an average monthly household income of R15 566.00 ECD services are offered here (City of Tshwane, 2014).

2.5 *Participants*

2.5.1 *Sampling strategy*

For this study, non-probability purposive sampling was used to select the caregivers of children aged from birth to 3 years 11 months who attend Confidence College Kidicol and Tiny Hearts pre-primaries. Principals at the aforementioned schools invited all the parents to

allocated time slots and those who were available were invited to participate in the study and attend a presentation pertaining to multilingualism at Confidence College Kidicol and Tiny Hearts pre-primary (Etikan, 2016).

2.5.2 Sample Size

Power analysis was used in the research study to determine the sample size of 16 participants. Power analysis essentially involves four components namely statistical power, sample size, significance level and expected effect size. Statistical power is the likelihood that the test will detect an effect of a certain magnitude. Sample size refers to the minimum number of observations which are required in order to observe an effect of a certain magnitude. Significance level is the maximum risk of rejecting the null hypothesis. The expected effect size is essentially based on the findings of the pilot study and is a standardised manner of expressing the expected result of the research study. Within qualitative research, the sampling size is determined by the sampling method. The sample size of a study with a purposive sampling method requires a minimum of 12 interviews (Bekele & Ago, 2022). The sample size consisted of eighteen participants.

Table 1

A table was used to display the demographic information of the participants in the research study (Table 1).

Participant demographics (n=18)

Demographics	n (%)
Caregiver relationship	
Mother of child	16 (88.89%)
Father of child	2 (11.11%)
Age of the child	
0-6 months	0 (0%)
6-12 months	1 (5.55%)
12-18 months	2 (11.11%)
18-24 months	0 (0%)
24-30 months	3 (16.67%)
30-36 months	2 (11.11%)

36-42 months	6 (33.33%)
42-47 months	4 (22.22%)
Number of siblings child has	
None	4 (22,22%)
One sibling	9 (50%)
Two siblings	4 (22.22%)
Three siblings	0 (0%)
Four siblings	1 (5,56%)
Five siblings	0 (0%)
Birth order of child included in study	
First	4 (22.22%)
Second	9 (50%)
Third	4 (22.22%)
Fourth	1 (5,56%)
Who looks after the child during the day	
Educational setting	16 (88.89%)
Childcare (at home/daycare)	2 (11.11%)
Age of Caregiver	
18-28 years old	2 (11.11%)
29-38 years old	12 (66.67%)
39-48 years old	4 (22.22%)
48-58 years old	0 (0%)
58 years and above	0 (0%)
Caregiver education level	
Matric	2 (11.11%)
Diploma	4 (22.22%)
Degree	7 (38.89%)
Postgraduate studies	4 (22.22%)
Employment	

Unemployed	3 (16.67%)
Employed	15 (83.33%)

2.5.4 Inclusion criteria

Participants needed to adhere to the following inclusion criteria to participate in the study. To participate in the study, individuals needed to be:

- adult primary caregivers of children between the ages of birth to 3 years 11 months, as that is the age range that the milestone guide was adapted for,
- residing in Tshwane and surrounding areas,
- with a child attending either of the two ECD centres at the time of data collection, and
- have understanding of conversational English to have been able to read the adapted developmental milestone guide.

2.6. Materials

2.6.1 Adapted Developmental Milestone Guide

The CDC developmental milestone guide, (CDC, 2017) used in the previous study was not inclusive of the unique characteristics of LMICs. This resulted in a master student (at University of Pretoria), developing an early childhood developmental milestone guide, (Bellini, 2024). The developmental milestone guide was adapted by an expert panel in order to adjust the socio-emotional domain and language used (e.g elaborating on what “coo” means) in order to make the developmental milestone guide linguistically and contextually appropriate to the South African context. In continuation with that study, the perspectives of the caregivers were explored to evaluate the guide regarding the contextual and linguistic relevance of the adapted early childhood developmental milestone guide in South Africa after the expert amendments were implemented.

2.6.2 Interview Schedule

A semi-structured interview (Table 2, Appendix G) that consisted of a total of thirty three questions relating to the caregivers’ perspectives of children ranging from the ages of birth to 3 years 11 months was conducted and included ten open-ended questions, thirteen close-ended questions and ten questions which had both quantitative and qualitative aspects (Ayob et al., 2021). The interviewer used various predetermined prompts to obtain more insight on particular responses, when necessary, which were then recorded. The credibility of the semi-structured interview questions was ensured by the researchers extracting information from previous studies, conducting a pilot study and receiving feedback from research supervisors. The perspectives that were gathered using the interview schedule

(Appendix G) regarding the applicability of the developmental milestone guide regarding the linguistic accessibility, dissemination and accessibility of the materials in the guide. In the occurrence of the participants not providing enough information, a prompt was added to facilitate the acquisition of additional information (Young et al., 2018).

An audio recording was made of each interview and the information obtained were transcribed verbatim. Field notes of the participants' responses were noted.

Table 2: Interview Schedule with evidence based justifications regarding the questions probing the perspectives of caregivers of young children regarding an adapted developmental milestone guide in a low-resourced setting:

Interview questions	Answer	Justifications
Demographics		
Are you the main caregiver of a child that is between the ages of birth to 3 years 11 months <i>Prompt: Do you take care of a child between the ages of birth to 3 years 11 months</i>		By gathering demographic information, this will provide a basis to understand the characteristics and background of the Pretoria Central Business District in Theresapark community and disclose their knowledge and experience in childcare (Scheffner Hammer, 2011). By gaining the demographic information, more insight about the population of Itireleng will be obtained (Veroff, 2020).
How old is the child in years and months?		
What is your relationship to the child ? <i>Prompt: Are you the mother, father, guardian, grandparent, sibling, aunt, uncle, or cousin?</i>		
How many siblings does the child have?		
What is the birth order of the child? <i>Prompt: Are they the youngest, middle, or oldest child?</i>		
Who looks after the child during the day? <i>Prompt: Who looks after the child most of the time?</i>		
How do you feel regarding your child's development? Likert Scale: very worried - worried- not worried- think developing well- developing very well <i>Please tell me more. .</i>		

Caregiver Information		
How old are you?		It is important to gather information on caregivers in order to supplement and substantiate the information gathered in the rest of the questionnaire (Đurišić & Bunijevac, 2017)
What is your home language? <i>Prompt: Are you Afrikaans, English, Ndebele, Pedi, Sotho, Swati, Tswana, Swati, Zulu, or other</i>		
What is your highest level of education? <i>Prompt: Did you complete matric/grade 10/ tertiary?</i>		
Are you working? What do you do for work ? (ask only if they said yes)		
Perspectives of ECD milestone guides in general		
Have you ever looked for information from any resources or people regarding early/young child development?		An overview of the milestone guide is needed to gain the caregiver's perspective on the current available developmental milestone guides as well as the adapted developmental milestone guide. Their perspective is needed in order to determine whether the adapted developmental milestone is contextually and appropriate to them (Lancet, 2017).
Have you used a milestone guide before, that informed you of a young child's development? YES/NO <i>Prompt: A milestone guide is a resource that guides you on what your child is expected to be doing at certain ages. If so, which milestone guide have you read?</i>		
If not, why have you not used a milestone guide before? <i>Prompt: Have you not been provided with one? / The language the milestone was in, is one that I am not familiar with. I am unable to read. / I was not sure how to use it/ I did not know you get these guides</i>		
What comments did you make on the guide?		
How did you find the developmental milestone guide? Likert Scale: unhelpful - slightly unhelpful- no-comment- slightly helpful - extremely helpful		
What did you like the most about this developmental milestone guide?		
What did you like the least about this developmental milestone guide?		

What would you change about this developmental milestone guide?		
How likely are you to use such a resource? Likert Scale: extremely unlikely - unlikely - neutral - likely - extremely likely		
Would you recommend this developmental milestone guide to another caregiver and why?		
Linguistic and contextual applicability of an adapted developmental milestone guide		
This guide was in English. What language would you prefer the information regarding the development of a child to be in and why?		There are a variety of cultures and languages in South Africa that need to be considered in order to determine that the adapted milestone guide is linguistically and contextually appropriate. The developmental milestone guide should be contextually and linguistically appropriate to those who utilise it (Kelley, 2018).
How easy is it to understand the developmental milestone guide right now? Likert scale: very easy - easy - fair - difficult -very difficult		
Were the words and examples used familiar to you? If so, which ones? <i>Prompt: Are there some words that you struggled with/did not understand? Could you perhaps show them to me? Did you circle any words you didn't understand?</i> <i>Prompt: The word "coo"</i>		
Do you think the ages in the milestone guide are correct or would you expect your child to do some things earlier or later? <i>Prompt: Sitting by 6 months - do you think this is too late or too early?</i>		
Was there anything that you read in the guide that you would have said in an easier way? This is important for us to know as we want caregivers to be able to easily understand the information in the guide. <i>Prompt: The 3 m for 3 months</i>		
Do you have the objects that are needed in the developmental milestone guide?		

<p><i>Prompt: For example do you/ do you not have a three to four piece puzzle?</i></p>		
<p>Dissemination (using the milestone guide)</p>		
<p>Would you want to use this milestone guide that tells you about a young child's development again?</p> <p><i>Prompt: why do you want to get this milestone guide</i></p>		<p>Information is needed to obtain the caregiver's perspective of the usability of the milestone guide, in order to ensure that it can be used by them. As the milestone guide will be adapted for their use, it is essential to enquire what the most suitable mode to receive the guide is, as the aim is to present the developmental milestone guide in a way that considers the qualities of a low-to-middle income country in order for it to be usable (Fernald et al., 2017).</p>
<p>Does the milestone guide show you what your child can do/cannot do? If so, can you give an example?</p>		
<p>How would you prefer to get the developmental milestone guide, if you could choose how to receive it?</p> <p>Prompt:</p> <ol style="list-style-type: none"> 1. <i>SMS</i> 2. <i>Email</i> 3. <i>Whatsapp</i> 4. <i>Hardcopy</i> 5. <i>Verbal presentation</i> 6. <i>Via Voice notes on a social media platform of your choice (Telegram, Whatsapp, Imessage, Signal)</i> <p>If you have more than one option, please can you order them from the one you want most to the one you want least.</p>		
<p>Why would you prefer to get the developmental milestone guide in that specific way?</p>		
<p>How often would you like to receive it?</p> <p>Prompt:</p> <ol style="list-style-type: none"> 1. <i>every two weeks</i> 2. <i>once a month</i> 3. <i>every 6 months</i> 4. <i>once a year</i> 5. <i>once off (The full guide all at once)</i> 		
<p>Now that you have read the guide is there anything else that we have not said about the guide that you would like to add?</p> <p><i>Prompt: Please tell me more about that?</i></p>		

2.7 Pilot study

2.7.1 Objectives

The purpose of the pilot study was to investigate any errors or discrepancies that might be found in the interview schedule, including ambiguous wording or vague questions, to ensure that the time allocated to review the milestone guide and answer the questions was adequate, as well as to evaluate and refine the interview schedule and the data collection procedures. The pilot study essentially ensured the dependability of the study by means of the researchers following the same procedures in collecting information in the pilot study as the research study (Brink et al., 2018).

2.7.2 Location and Participants

The pilot study was conducted at an ECD centre in Moreleta Park, Gauteng next to an informal settlement. The area holds a population of 3000 inhabitants. The majority of households are headed by individuals who are domestic workers and form part of the low-income socio-economic bracket (Mashika, 2019). Three participants that met the study inclusion criteria were selected to participate in the pilot study. The participants included a mother of a 3 year old child, grandmother of a 3 years, 5 months old child, and a mother of a 3 years, 2 months old child. The feedback that they provided about the interview schedule determined the revisions that needed to be made to the interview schedule as well as to refine the procedures.

2.7.3 Results of Pilot Study

From the pilot study it was determined that the level of English used in the informed consent letter and interview schedule was difficult for the participants to understand. To ensure that the participants understood the interview schedule, the level of English was altered to more basic conversational English. The consent letter was too long, which resulted in participants asking the interviewers to summarise it for them before they provided consent. The open-ended questions in the interview schedule were repetitive and did not provide comprehensive qualitative information. Insufficient prompts were used when conducting the interview. Amendments were made prior to conducting the study by simplifying syntax and providing additional prompts to the open-ended questions. Words that were difficult to understand in the guide were not changed but rather explained when not understood. The results of the pilot study pertaining to the interview schedule were implemented during the data collection phase of the study.

2.8 Procedures

2.8.1 Data collection

The principals at Confidence College Kidicol and Tiny Heart Pre-Primary shared information with the caregivers pertaining to the study and a time slot was provided for when the study and presentation would take place. Once informed consent was obtained by the researchers from the participants, the researchers provided the participants with the adapted milestone guide and provided instructions prior to the interviews being conducted. They received 15 minutes to peruse the guide. During the 15 minutes, participants were given a pen/pencil to make comments on the guide. They were asked to identify any information they disagreed with, words they did not understand, any queries they may have, and if the information provided was sufficient. Participants were directed to a designated room within the preschool, where one researcher facilitated the 25-30 minute interview. The participants who were not in an interview engaged in a presentation where the researchers distributed information brochures about multilingualism and early communication development. The participants that participated in the interview, subsequently attended the presentation and those that attended the presentation, subsequently participated in the interview. In the event that a caregiver raised a concern regarding the development of their child, they were provided with information about early communication intervention clinics that they could consult (Appendix D).

2.8.2 Data analysis

The data collected was captured in an excel document for analysis. The qualitative aspects of the study were analysed by finding patterns and producing explanations using inductive and deductive reasoning to categorise data into segments. Descriptive coding and interpretive coding were used (Brink et al., 2018). From this coding, themes were synthesised. The quantitative aspects were analysed using descriptive statistics.

Reflexive thematic analysis was followed during the data analysis process (Braun & Clarke, 2014). The six steps of the reflexive thematic analysis were familiarisation, coding, generating initial themes, reviewing themes, defining and naming themes as well as writing up. The first step of familiarisation entailed that the researcher who analysed the data was familiar with the data that was collected. Coding involves the researcher labelling the data by highlighting the information manually or by using thematic analysis software to focus on information shared by the participants that is related to the research question. Generating initial themes entailed the researcher interpreting the information based on the coding that was made. Reviewing themes, referred to the researcher revising the themes and relating them to the research question. Defining and naming the themes entailed the researcher

providing an interpretation of themes identified from the participants' answers and relating them to the research question. The researcher would note down all the information pertaining to the interview process and participants' results, this includes the reflexive reflections and observations (Braun & Clarke, 2014).

Descriptive statistics were used to analyse the quantitative aspects of the research study to explain and summarise the data (Brink et al., 2018). The descriptive statistics used included frequency distributions. This study made use of a univariate data analysis as only one variable was evaluated. The variable which was measured included the applicability of an adapted developmental milestone guide in a low-resourced setting.

2.9 Measures of trustworthiness

Trustworthiness was used to measure reliability and validity of the qualitative study. Likert scale, which was a unidimensional, summated rating scale, was used as a measure of trustworthiness to obtain the participants' opinions and attitudes, as this research study has quantitative aspects (O'Brien et al., 2018).

2.9.1 Authenticity

The authenticity was ensured by not changing the research participants' responses gained in the interviews conducted. If responses were ambiguous regardless of the prompts provided, consensus was reached by the researchers with regards to interpretation of what the participant had said (Leedy & Ormod, 2015).

2.9.2 Confirmability

This related to whether the information provided by the caregivers was an accurate representation of their own views and perspectives and not under the influence of the researcher (Nowell et al., 2017). The techniques that were used to ensure confirmability include reflexivity (the researchers were aware of their own prejudices, views, beliefs, and biases) and triangulation (research triangulation was used for both quantitative and qualitative aspects of the research study, as there are multiple researchers involved in the study)

2.9.3 Dependability

Dependability determined the trustworthiness of the study by conducting an audit. The audit was conducted by one of the researchers following the same procedures used by the other researchers to determine whether they are dependable (Nowell et al., 2017). A pilot study was conducted to determine the internal dependability of the research procedures in order to

ensure the dependability of the study, this entailed one of the researchers following the same procedures in collecting information prior to the research conduction (Brink et al., 2018).

2.9.4 Credibility

This referred to authenticating the internal validity of the study. Various techniques were used such as using peer debriefing, as well as validating and verifying the researchers' interpretations of the research participants' responses to the study (Nowell et al., 2017). The credibility of the research was ensured by allowing the participants to review the researchers' interpretations of their answers, after the completion of the interview to ensure that the initial meaning was maintained (Brink et al., 2018).

2.9.5 Transferability

This referred to the ability of the study findings to be applied to other contexts. To ensure transferability, techniques such as thick description were used (Nowell et al., 2017). The researchers conducted the interviews at two different sites with caregivers who met the inclusion criteria. After the research was done the transferability of the results to the different contexts were discussed.

3. Results

Overall, the majority (88.8%; 16/18) of the participants had a positive response towards the adapted milestone guide and found it beneficial to have it available in South Africa. Two participants (11.1%, P18 and P3), however, deemed the guide to be non-inclusive of neurodivergent children. These two participants also reported that they have been exposed to this information previously, due to their children requiring more developmental support.

Based on the participants' feedback and perspectives of the milestone guide, additional adaptations were made to seven of the 46 items in the guide. An entire domain on feeding skills (birth through 30 months) was also added, which contributed 19 new items. This thus resulted in a total of 66 items over 5 domains in the final version of the linguistically and contextually adapted developmental milestone guide (Appendix I). The domains that required adaptations included the social-emotional domain whereby two changes were made and in the Language/Communication domain one change was made. The changes that were made in the domains resulted in the development of themes which were derived from the responses of the participants.

Four main themes were derived from the interviews with the 18 participants pertaining to their perspectives of the adapted developmental milestone guide. The themes include: i) accessibility of information regarding development, ii) linguistic complexity and diversity, iii) developmental literacy, and iv) contextual relevance (Table 3). Two of the themes - linguistic complexity and diversity and contextual relevance- provided additional insight on further amendments to be made to the adapted developmental milestone guide to make it more user-friendly (Appendix I).

Table 3: Themes identified from the participants perspectives of the adapted developmental milestone guide

Theme	Perspectives of the adapted developmental milestone guide	Supporting quotes
Accessibility	<p>Participants were asked if they had used a developmental milestone guide before and if they had not why, to which the majority (83.3%, n=15; 55.6%, n=10) reported not having looked for one, not knowing about one, and not being provided with one.</p> <p>When asked how they would prefer to access the adapted developmental milestone guide, the majority (72.2%, n=13) preferred to receive it through email.</p>	<p><i>Previous exposure:</i> P12 responded and said “No, I did not know that such was available”.</p> <p><i>Dissemination preference:</i> P18 said that “Emails, as it stays there forever. Physical copies can get lost”</p>

<p>Linguistic complexity & diversity</p>	<p>With regards to having the milestone in another language, the majority of the participants (61.1%, n=11) described the adapted developmental milestone guide as being easy to understand in terms of the language used.</p> <p>When asked about how easy the adapted developmental milestone guide was to understand as well as how unfamiliar the words were, the participants came to the agreement that, overall, the adapted developmental milestone guide was not difficult to understand (88.9%, n=16). Just over half of the participants (55.5%; n= 10) indicated that some words and/or abbreviations used in the adapted developmental milestone guide were difficult to understand. Suggestions to change certain words were, however, made.</p>	<p><i>Language options:</i> P2 said, “Zulu and Tswana. Because people that can speak Swati and Ndebele can speak Zulu and people that speak Northern Sotho can understand Setswana. So at least if it is Zulu and Tswana it might accommodate broader groups. Not all of us can read English, not all of us can speak English.”</p> <p>P18 said, “Again I think that will depend on your target audience. If you are in more urban areas, then almost everyone can understand English, but if you go down into the rural provinces you might have to adjust.”</p> <p><i>Word choice:</i> P2 said, “ Easy, because I only had to read it twice and link it to the development of my child.” P5 said, “Yes, very easy to follow.”</p> <p>P1 said, “Maybe the ‘coo’, is there not any other word they can use.”</p> <p>P13 said, “I feel the word ‘clinging’ might be difficult for others to understand.”</p>
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<p>Developmental literacy</p>	<p>When asked if they would recommend the adapted developmental milestone guide to friends with children, all of the participants (100%, n=18) agreed that it would be beneficial to share with caregivers, ECD centres and expecting parents.</p> <p>When asked if the participants found the adapted developmental milestone guide helpful, more than half (55.5%, n=10) agreed that the adapted developmental milestone guide was extremely helpful.</p>	<p>P15 said that, “Yes, because there are a lot of children who struggle, it gives parents more information so they can help the child.”</p> <p>P2 said, “It’s the element of early childhood development that we miss mostly, which I believe is the foundation, because once you miss the step of early childhood development, you miss the steps of cognitive thinking... So if we try to align our kids with the methods that were researched and put together based on our environment, and give attention to our kids, we will be able to produce children that pass with distinctions”.</p> <p>P7 said that it is, “Extremely helpful as I know what my child is supposed to do at 36 months, so I know if I should be concerned or not, or if she needs to do anything.”</p> <p>P18 said, “Yes, especially not the parents but a nanny or somebody at daycare.”</p> <p>P7 said that it is, “Extremely helpful as I know what my child is supposed to do at 36 months, so I know if I should be concerned or not, or if she needs to do anything.”</p>
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<p>Contextual relevance</p>	<p>When asked if the milestones correlated with aspects of their children’s development, most of the participants (77.7%, n=13) agreed about the appropriateness of the allocated ages across domains for South African children.</p> <p>When the participants were asked whether they have access to the objects mentioned within the developmental milestone, almost all of the participants (88.9%, n=16) agreed that the objects mentioned are generally available and accessible in low and middle income settings.</p>	<p><i>The contextual relevance of the allocated ages of the adapted developmental milestone guide:</i></p> <p>P5 said, “My son passed them, and I can see at 12 months he met them, so yes”</p> <p>P13 mentioned “These objects can be found in South Africa”</p> <p>P18 (a caregiver of a neurodivergent child) said, “Previous experience age range is correct, but with this child we expect later development.”</p> <p><i>The accessibility to contextually relevant objects:</i></p> <p>P1 said “Yea I do have those, I even have those stacking for towers.”</p> <p>P12 said “ Yes I do.”</p>
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Accessibility

The majority of participants reported that they had not yet sought information regarding their children’s development, and the remainder of the participants had sought information from healthcare workers as well as their own research. The prominent reason for the majority of participants (83.3%, n=15) not using a developmental milestone guide prior to the research study, was the unawareness of its existence. This was evident as P11 said, “Not heard of it,” and P6 said, “I did not know that they exist.” Despite not being aware of a developmental milestone guide, other participants indicated that they had sought out information regarding their children’s development elsewhere but did not consider developmental milestones, as P2 reported, “I have never used it but like uhm...when I have tried to research the child life cycle, to find out about certain things in terms of when they are in terms of research supposed to crawl.” P15 had not sought information due to the following reasoning, “I did not know about it, I know about the RTHB and it’s helpful as it tells me about my child’s development and what they should be doing and when I should be concerned.” (Figure 1). Most of the participants (72.2%, n=13) indicated that their preferred dissemination mode of the adapted developmental milestone guide was email, however other modes such as whatsapp and hardcopy were preferred (Figure 2).

Figure 1

Sources of obtaining developmental information

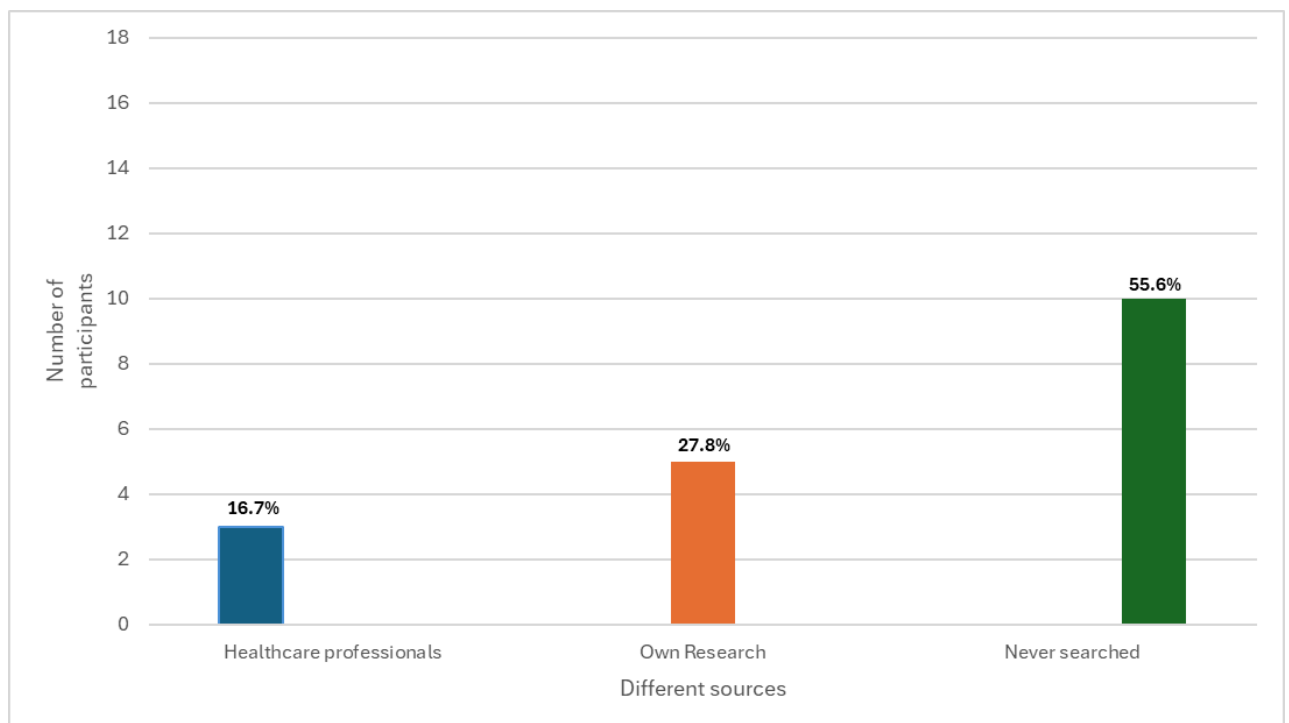
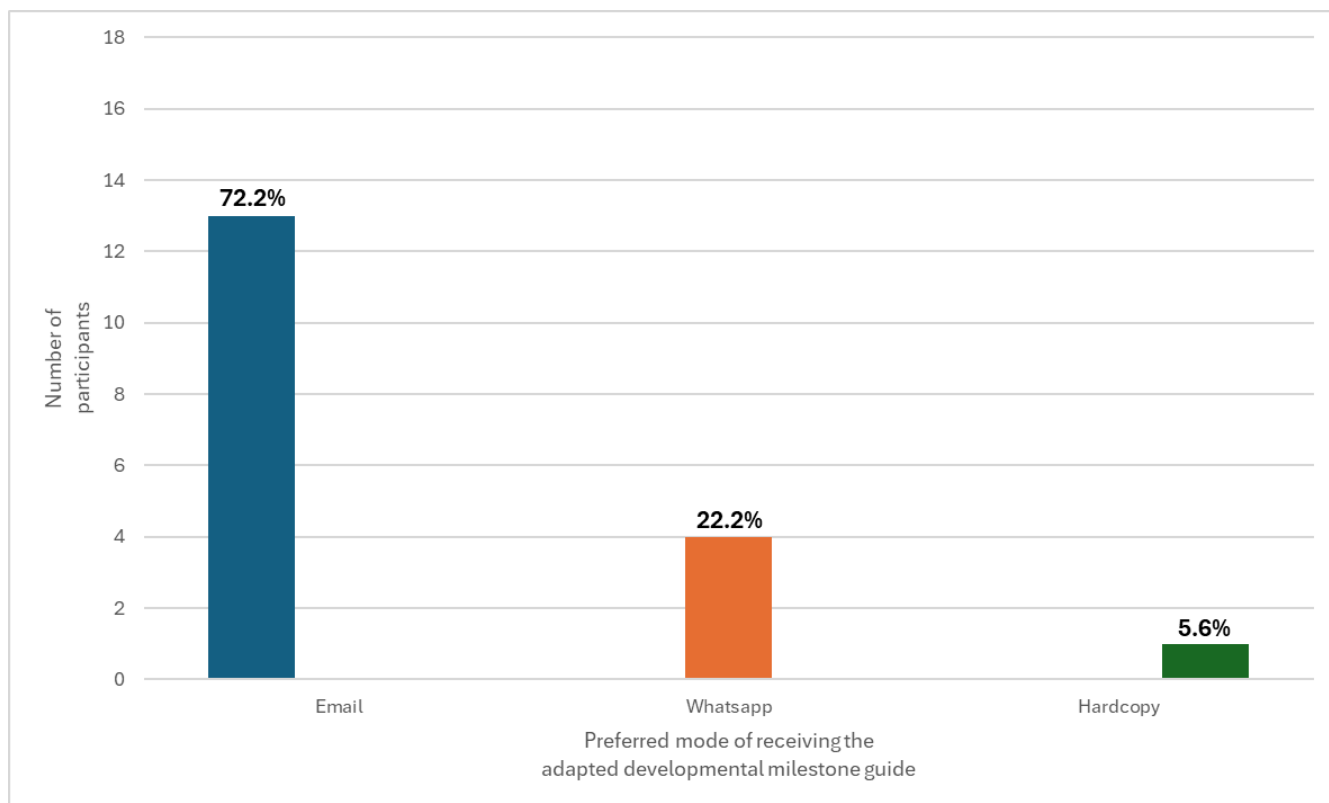


Figure 2

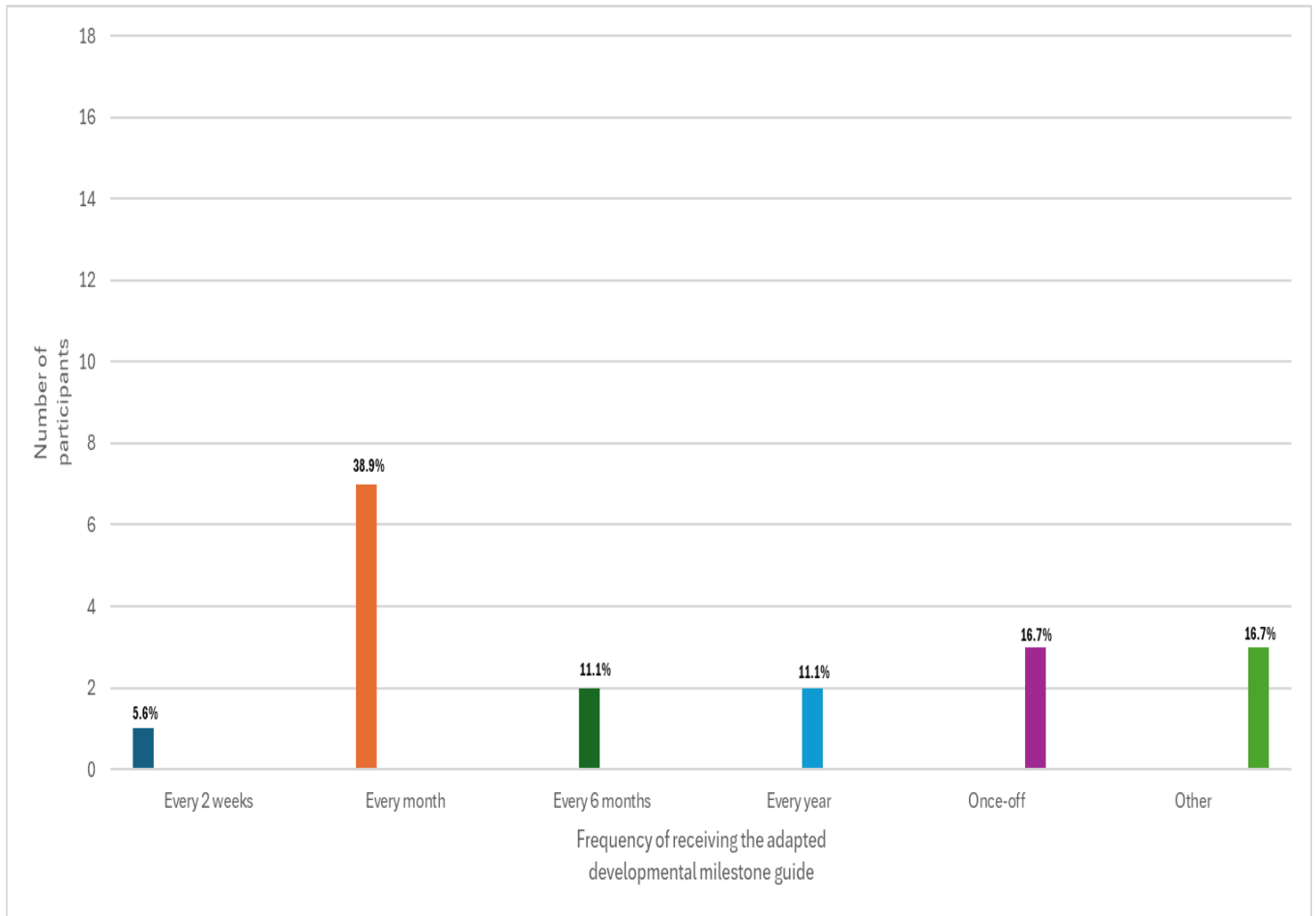
Preferred mode of receiving the milestone guide



Pertaining to how frequently the participants chose to receive the adapted developmental milestone guide, the majority of participants preferred to receive it once a month (P3, P4, P7, P13, P15, P16, and P17). The other participants: P11, P14, and P18 preferred to receive it once-off and participants; P2, P6, and P10 had not suggested a time that was provided and instead preferred to receive when an update was made (Figure 3).

Figure 3

The preferred frequency of the participants receiving the milestone guide



Developmental literacy

Developmental literacy was identified as a theme, as it labelled participants' remarks regarding the adapted developmental milestone supporting their knowledge of ECD. The majority (55.5%; n=10) of participants said that the adapted developmental milestone guide was extremely helpful in increasing their knowledge about their children's development. There were (33.3%; n=6) of participants who stated that it was slightly helpful and two participants (11.1%; n=2), P12, an ECD Practitioner, and P18, a parent of with a neurodiverse child reported that it was unhelpful.

Contextual relevance

The contextual relevance of the developmental milestone guide refers to both the examples of objects used to substantiate the milestone as well as the correlated age to attain the

pertaining milestone. The majority of participants (94.4%; n=17) reported that they had the objects mentioned in the adapted developmental milestone guide and that no additional resources were needed. The majority of the participants (77.7%; n=14) felt the milestones correlated with what they observed in terms of their own children's development.

4. Discussion

Developmental tools that are currently available are typically created for HICs and are not culturally and linguistically applicable to the South African context (Abessa et al., 2016). Although the participants expressed their familiarity with the RTHB, it did not facilitate familiarity with the concept of developmental milestones. That supports the need for a more explicit tool that allows the caregivers to explicitly obtain developmental information about their children. In the current study, the adapted developmental milestone guide was trialled in the South African context, with the sample population of caregivers of children between the ages of birth to 3 years 11 months who are in the low to middle income group. Based on participants' responses there was an overall agreement with the information in the adapted developmental milestone guide and consensus that the milestone guide could be used in South Africa. Despite this overall consensus, the caregiver's perspectives provided additional amendments to the adapted developmental milestone guide to further increase its linguistic and contextual appropriateness. Based on a study conducted by du Toit et al., 2024, that recognised the importance of obtaining caregivers' perspectives to further refine their research to determine the viability of hybrid tele assessment, it is vital to utilise the perspectives as they are key stakeholders in the developmental monitoring of their children (du Toit et al.,2024).

Accessibility:

The results of the current study illustrate that caregivers within the South African context do not seek out developmental information from healthcare professionals and other resources. The reason being, a lack of knowledge and limited awareness regarding the existence of tools that can support caregivers and their children during the early years (Akkineni and Kondapathi, 2020). A study by Akkineni and Kondapathi, 2020, revealed that caregivers relied on developmental information from their family members and neighbours. However, when approached by Healthcare workers and provided with information about their children's development, they started seeking out developmental information. Many caregivers were unaware of what the term developmental milestone referred to, this is synonymous with the study conducted by Akkineni and Kondapathi, 2020. Some caregivers did not consider the RTHB as a tool that provides developmental information. In correlation, previous research indicated that caregivers from LMICs are less likely to enquire about developmental

information surrounding their children as caregiver's perceptions are formed by comparative deductions that they make about their children's development with family and friend's children due to the lack of awareness and accessibility to such a tool (Chung et al., 2019). This is further synonymous with caregiver behaviours in LMICs pertaining to a study which states that caregivers were more likely to seek information pertaining to their children's growth rather than development in LMICs, as the earlier perspectives were focused on the survival of their children and not necessarily the thriving of their children (Akkineni & Kondaparthi, 2020). A study by Alghamdi et al., 2023 indicates that parents are more aware and knowledgeable about motor developmental milestones of their children, because these are aspects that can be explicitly seen. From the participants who have sought information regarding their children's development, they mostly used internet sources. The challenge with this is the uncertainty of the accuracy of the information (Ohonba et al., 2018).

Familiarising themselves with accessibility and availability of materials within the home environment is important to help the researchers make revisions according to what is available to families in their immediate environment, to ensure that familiar materials are used that the families have available in their microsystem, to optimise their children's development (Bronfenbrenner, 1977; Balton et al., 2019). The adaptations to what is available to the caregivers will help the researchers amend the adapted developmental milestone guide in a format that the caregivers preferred. A digitised format of the guide sent via email was the most preferred (72.2%) method of dissemination as it would not have the potential to get lost (participant 8). As the world is progressing towards having documents digitally, this is preferred as the likelihood of the document to be lost or damaged is low, and it could be distributed easily amongst other caregivers as the caregivers mentioned that they would recommend the milestone guide to other caregivers. It is evident that primary caregivers have shown an interest in using a mobile device in order to obtain information relating to their health, based on the 95% of registered users on MomConnect (Skinner et al., 2018). . MomConnect is a digital South African platform designed to provide primary caregivers, specifically mothers with information surrounding their gestational period as well as the ECD period (Skinner et al., 2018). The dissemination of the adapted developmental milestone guide in a digitised format is facilitated by Tshwane free wifi, which provides free wifi to over 780 open public zones in Tshwane such as clinics and educational spaces (Mathane & Gumbo, 2023).

Linguistic complexity & diversity

The overall perspective of the adapted developmental milestone guide was that the language used was linguistically appropriate in terms of the diversity. Incorporating

caregivers' suggestions from the study, such as the use of less complex words, will enhance its user-friendliness and reduce the linguistic complexity of the adapted developmental milestone guide. This would improve the accessibility of the adapted developmental milestone guide across various contexts in South Africa. Consequently, if caregivers understand the words used in the milestone guide, it will assist them in raising any concerns they may have regarding their children's development allowing for timely referrals to be made, which would support uptake (Zubler et al., 2022). Research indicates that the milestone guides (CDC) that are currently available tend to lack clarity (Zubler et al., 2022).

Some caregivers agreed that the adapted developmental milestone guide should be available in the different South African languages due to the multicultural nature of the South African context. In contrast to our findings, studies in South Africa suggest that South Africans prefer reading information in English compared to their primary language (van der Merwe et al., 2017; Fyvie et al., 2021). It is recommended for a developmental tool to undergo the rigorous process of translation into a different language to ensure linguistic equivalence by taking into account unique cultural attributes (Dubay & Watson, 2019). This, however, may be a time consuming process to translate the adapted developmental milestone guide in all South African languages as validity and reliability needs to be ensured. Further statistics may need to be reviewed to have the milestone guide available in the main "metropolitan languages" spoken in certain areas and not necessarily in each language, as certain languages have adopted the "main metropolitan language" as their lingua franca (Wagner et al., 2020).

Majority of the participants, however, mentioned they would prefer to receive the guide in English as some concepts are easier to express in English than other South African languages (van der Merwe et al., 2017 ; Fyvie et al., 2021). This aligns with the aforementioned study results from (van der Merwe et al., 2017; Fyvie et al.,2021) which indicated that South Africans preferred choice of reading information is English. This finding is congruent with a study which was conducted whereby the majority of the participants preferred different screening tools to be in English, despite South Africa's multilingual context, as English is a dominant language which is used in educational sectors (Vorster et al., 2021, van der Merwe et al., 2017). The provided perspectives from the current study and findings from the aforementioned studies support making the developmental milestone guide available in both English as well as in the main metropolitan languages in South Africa in order to facilitate the multilingual context.

Developmental literacy

Based on the findings it was evident that participants required additional support in their developmental literacy in certain areas such as: language/communication domain, cognitive domain and feeding domain. Research conducted by Akkineni & Kondaparthi (2020) reported that caregivers in LMICs have limited developmental literacy due to a focus on growth rather than development. In addition, they are unaware of where to obtain information regarding developmental milestones for their children leading to no exploration of information at all (Akkineni & Kondaparthi 2020). Limited developmental literacy may impact developmental outcomes negatively (Akkineni & Kondaparthi, 2020). Receiving information about their children's developmental outcomes, resulted in increased awareness which lead to behaviours supporting their children's development (Akkineni & Kondaparthi, 2020). From this research it can be deduced that the adapted developmental milestone guide would be beneficial to the developmental literacy of caregivers in South Africa. It is imperative that all caregivers need to be informed about age-expected ECD (Sajady et al., 2018). Caregivers of preterm infants and neurodivergent children were provided with a disclaimer on how to utilise the adapted developmental milestone guide. For example, regarding preterm infants, the corrected age needs to be used, additionally for neurodivergent children the information in the adapted developmental milestone guide can still be valuable even though neurodivergent children may achieve the developmental milestones at a delayed pace but still in the developmental sequence (Hannigan et al., 2021; Brown et al., 2014).

Contextual relevance:

The general consensus was that most of the participants have the perspective that the examples of objects in the guide and the developmental milestones were contextually relevant to the South African context. They indicated that the milestones correlated with what they observed in their own children's development (Zubler et al., 2022). Consequently, when caregivers are in agreement with the developmental milestones in the adapted developmental milestone guide, it indicates the likelihood of caregivers in South Africa utilising it (Zubler et al.,2022). This was observed in how the caregivers who disapproved of the adapted developmental milestones said that they would not use it.

5. Limitations of research study

Limitations of the research study, is that no considerations were made of how the adapted developmental milestone guide would be used by populations that are illiterate and impaired. In 2019, the South African adult illiteracy rate was 12%, this is approximately 4.4 million adults (Khuluvhe, 2021). Maternal educational levels can affect the exposure to appropriate care needed to support the developmental outcomes of their children (Onhonba et al., 2018). Thus adding verbal instructions to the milestone guide or a video in South African Sign

Language may include those who are unable to read it. An additional limitation of the current study is that the inclusion criteria did not exclude caregivers with neurodiverse children. This may result in a lack of variability in the perspectives gathered, as caregivers of neurodiverse children might have unique experiences and challenges that differ significantly from those of caregivers of typically developing children. Furthermore, the experiences of caregivers with neurodiverse children may highlight specific needs or additional adaptations that need to be made in the adapted developmental milestone guide. Consequently, future research is recommended to supplement the information obtained in the research study. The sample size for this study was small thus, could not be an accurate representation of the entire population (Alghamdi et al., 2023).

6. Strengths of the research study

The research study has several strengths which enhance its significance and reliability. One of the key strengths is its generalizability; the findings can be applied to the larger population of South Africa. The research obtains the perspectives of the caregivers, who are the key stakeholders who would facilitate the development in their children (du Toit et al., 2024). The study also prioritises ethical considerations, adhering to principles during data collection that protect participants thus ensuring credibility. Furthermore, the results are both impactful and linguistically and contextually relevant, as they make a meaningful contribution to the existing knowledge base of adapted resources and tools within the South African context. Additionally, the data collection process was executed in an effective and systematic manner, ensuring that caregivers' perspectives were accurately captured.

7. Recommendations for future research:

Further research is recommended to trial the further adapted developmental milestone guide (Appendix I) to determine how the guide is supporting caregivers' developmental literacy in the South African context. The further adapted developmental milestone guide can also be distributed and implemented by speech-language therapists in South Africa. Research needs to be conducted to obtain information regarding the behaviours that caregiver's engage in to seek out information about their children's developmental milestones in LMICs after being exposed to and accessing the adapted developmental milestone guide (Chung et al., 2019). Since the developmental milestone guide would be amended in order to be used by populations that are illiterate, neurodiverse or communicate using South African Sign Language, it would be essential to determine the effect the tool has on maternal literacy and the effect it has on children's development through pretest-posttest studies. Additionally, caregivers' of neurodiverse children must be included as participants in future studies.

Consequently, future research is needed to determine the incidence of developmental delays/ disorders as a result of increased awareness and knowledge in caregivers.

8. Conclusion

The findings of this research study revealed that the developmental milestone guide from CDC adapted by the Master's student was reported to be linguistically and contextually relevant, however further adjustments need to be made to the adapted developmental milestone guide based on the caregivers' perspectives obtained in this research study. The amendments made relate to linguistic terms for clarification purposes, additional information which may be beneficial in making the guide more comprehensive and user-friendly. Gathering perspectives obtained from caregivers proved to hold promise in the uptake of a comprehensive adapted developmental milestone guide, as they are key stakeholders in early childhood development and demonstrates a decentralised method of support for their children in a holistic manner.

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survive and thrive to transform health and human potential

World Health Organization. (2018). *Nurturing care for early childhood development: a
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10. Appendices

Appendix A: Research ethical clearance from the research ethics committee of the Department of Speech-Language Pathology and Audiology



Faculty of Humanities

Fakulteit Geesteswetenskappe
Lefapha la Bomatho

Department of Speech- Language Pathology and Audiology

Humanities 100
Since 1919

29 February 2024

Dear Researchers,

Project: Caregivers' Perspectives of a Linguistically and Contextually Adapted Early Childhood Developmental Milestone Guide

Researchers: Bahadoor Z (u21546989) Masekela M (u21660192) Masule K.H. (u21658732) Molongoana P.N (u21511463)

Supervisors: Dr R Eccles, Dr M du Toit, Dr S Abdoola

Department: Department of Speech-Language Pathology and Audiology

Reference Number: SLPA2024/01

Thank you for the application submitted to the Research Committee of the Department of Speech-ology and Audiology, Faculty of Humanities. We have the pleasure of informing you that the above application was approved on 29 February 2024.

Please note that this approval is based on the assumption that the research will be carried out along the lines laid out in the proposal.

We wish you success with the project.

Sincerely

A handwritten signature in black ink, appearing to read 'L. Pottas'.

Prof Lidia Pottas
Chair: Departmental Research Committee

A handwritten signature in black ink, appearing to read 'J. van der Linde'.

Prof J van der Linde
HEAD: DEPARTMENT OF SPEECH-LANGUAGE PATHOLOGY AND AUDIOLOGY
UNIVERSITY OF PRETORIA

Appendix B: Permission letter to Tiny Hearts Pre-Primary



Faculty of Humanities

Fakulteit Geesteswetenskappe
Lefapha la Dinsimohi

Department of Speech-Language Pathology and Audiology

Humanities 100
1921-2021

WHO Collaborating Centre for Prevention of Deafness and Hearing Loss



Tiny Hearts Pre-Primary
52 Pretorius Street
Pretoria Central
South Africa

April 2024

Dear Ms Susan Erasmus,

RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT TINY HEARTS PRE PRIMARY

We are final year Speech-Language Pathology students from the Department of Speech Language Pathology and Audiology, University of Pretoria. We are conducting an undergraduate research project titled "Caregivers' Perspectives on an Adapted Developmental Milestone Guide". The study is focused on obtaining the perspectives of caregivers of young children from birth to 47 months (three years, 11 months) based on a recently adapted developmental milestone guide for South African families in low-to middle income settings. The adapted developmental milestone guide describes the development of children from birth to 47 months adapted to increase linguistic and contextual relevance.

Description of the research:

The researchers will approach the different caregivers (grandparents, aunts, uncle, parents, siblings, or neighbours) of children that attend Tiny Hearts Pre -Primary about participating in the study. We would like to request that you distribute the study information brochure and informed consent form to caregivers of children attending Tiny Hearts Pre Primary. The data collection period of the study will be conducted over a period of three weeks. The participants will be asked to attend one of three data collection sessions. They will be given 15 minutes to peruse the adapted developmental milestone guide after which they will be interviewed for 30 minutes. Concurrently, a presentation will be conducted by the researchers of how the caregivers can support their children's development. Caregivers will also be given an adapted early childhood developmental milestone guide.

Confidentiality:

Participants will be assigned a numerical code, for example Participant 1, which will be used as an identifier. No personal information other than the information given in the interview will be used.

Ethical approval:

Ethical clearance was obtained from the Research Ethics Committee of the Department of Speech-Language Pathology and Audiology, University of Pretoria. The study has been structured in accordance with the Declaration of Helsinki (last update: October 2013), which deals with the recommendations guiding health professionals in research involving human subjects. A copy of the Declaration may be obtained from the researchers should you wish to review it.

We are hereby seeking your permission to conduct this study at Tiny Hearts Pre-Primary, and for the following:

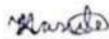
1. We are requesting permission to invite the caregivers at Tiny Hearts Pre-Primary to participate in our study, Caregivers' Perspectives on an Adapted Developmental Milestone Guide.
2. Conduct interviews with the caregivers of children between the ages of birth to 3 years 11. The researchers will concurrently conduct a presentation of how the caregivers can support their children's development.
3. If possible, may we kindly have a secluded quiet area to conduct the interviews for the duration of the presentation on the premises for 3 weeks on one day of each week.

Should you require any further information, please do not hesitate to contact the student representative or one of the supervisors for this study. The contact details for these respective individuals are provided below: Kabuba Masule (4th year Speech-Language Pathology student representative) - u21658732@tuks.co.za, Dr Renata Eccles – renata.mosca@up.ac.za, main supervisor. The final undergraduate research project can be made available to you, if requested. Your permission to conduct this research study will be greatly appreciated. Thank you for your assistance.

Yours sincerely,



Zeneera Bahadoor



Kabuba Masule



Mbali Masekela



Palesa Molongoana



Dr Renata Eccles



Dr Shabnam Abdoola



Dr Maria du Toit



Prof J. van der Linde

Head of the Department of Speech-Language Pathology and Audiology

I, Ms Susan Erasmus, give permission to the final year Speech-Language Pathology students at the University of Pretoria to conduct their study "Caregiver's Perspectives of an Adapted Developmental Milestone Guide" at Tiny Hearts Pre Primary.

Susan Erasmus

16 April 2024

Ms Susan Erasmus

Date



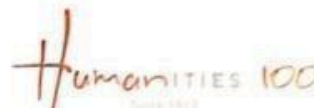
Appendix C: Permission letter to Confidence College (Kidicol)



Faculty of Humanities

Fakulteit Geesteswetenskappe
Lefapha la Bomotheo

Department of Speech-Language Pathology and Audiology



WHO Collaborating Centre for Prevention of Deafness and Hearing Loss



Confidence College Kidicol
56 Kgoši Mampuru Street
Pretoria Central
South Africa

April 2024

Dear Ms Annelize van Eeden,

RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT CONFIDENCE COLLEGE KIDICOL

We are final year Speech-Language Pathology students from the Department of Speech Language Pathology and Audiology, University of Pretoria. We are conducting an undergraduate research project titled "Caregivers' Perspectives on an Adapted Developmental Milestone Guide". The study is focused on obtaining the perspectives of caregivers of young children from birth to 47 months (three years, 11 months) based on a recently adapted developmental milestone guide for South African families in low-to middle income settings. The adapted developmental milestone guide describes the development of children from birth to 47 months adapted to increase linguistic and contextual relevance.

Description of the research:

The researchers will approach the different caregivers (grandparents, aunts, uncle, parents, siblings, or neighbours) of children that attend Confidence College Kidicol, about participating in the study. We would like to request that you distribute the study information brochure and informed consent form to caregivers of children attending Confidence College Kidicol. The data collection period of the study will be conducted over a period of three weeks. The participants will be asked to attend one of three data collection sessions. They will be given 15 minutes to peruse the adapted developmental milestone guide after which they will be interviewed for 30 minutes. Concurrently, a presentation will be conducted by the researchers of how the caregivers can support their children's development. Caregivers will also be given an adapted early childhood developmental milestone guide.

Confidentiality:

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Ethical approval:

Ethical clearance was obtained from the Research Ethics Committee of the Department of Speech-Language Pathology and Audiology, University of Pretoria. The study has been structured in accordance with the Declaration of Helsinki (last update: October 2013), which deals with the recommendations guiding health professionals in research involving human subjects. A copy of the Declaration may be obtained from the researchers should you wish to review it.

Room 3-4, Communication Pathology Building
University of Pretoria, Private Bag X20
Hatfield 0028, South Africa
Tel +27 (0)12 420 2814 | Fax +27 (0)12 420 2355

We are hereby seeking your permission to conduct this study at Confidence College Kidicol, and for the following:

1. We are requesting permission to invite the caregivers at Confidence College Kidicol to participate in our study, Caregivers' Perspectives on an Adapted Developmental Milestone Guide.
2. Conduct interviews with the caregivers of children between the ages of birth to 3 years 11. The researchers will concurrently conduct a presentation of how the caregivers can support their children's development.
3. If possible, may we kindly have a secluded quiet area to conduct the interviews for the duration of the presentation on the premises for 3 weeks on one day of each week.

Should you require any further information, please do not hesitate to contact the student representative or one of the supervisors for this study. The contact details for these respective individuals are provided below: Kabuba Masule (4th year Speech-Language Pathology student representative) - u21658732@tuks.co.za, Dr Renata Eccles - renata.mosca@up.ac.za, main supervisor. The final undergraduate research project can be made available to you, if requested. Your permission to conduct this research study will be greatly appreciated. Thank you for your assistance.

Yours sincerely,



Zeneera Bahadoor



Kabuba Masule



Mbali Masekela



Palesa Molongoana



Dr Renata Eccles



Dr Shabnam Abdoola



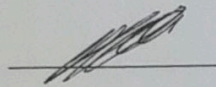
Dr Maria du Toit



Prof J. van der Linde

Head of the Department of Speech-Language Pathology and Audiology

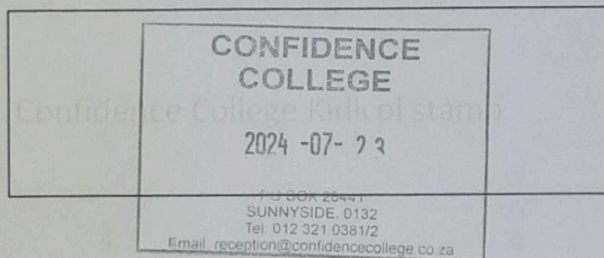
I, Ms Annelize van Eeden, give permission to the final year Speech-Language Pathology students at the University of Pretoria to conduct their study "Caregiver's Perspectives of an Adapted Developmental Milestone Guide" at Confidence College Kidicol.



Ms Annelize van Eeden

23/7/24

Date



EARLY COMMUNICATION TIPS IN SA

A

B

C

Speech-language Therapist

What do we do?

- We prevent
- We assess
- Diagnose
- Treat

Who do we do this for?

- 0 years old-final stages of life

Learning

AGENDA

01 WHO ARE WE AND WHAT DO WE DO	02 HOW DOES LANGUAGE IN MULTILINGUAL CHILDREN LOOK AND TIPS TO HELP
03 HOW TO STIMULATE LANGUAGE IN DAILY ROUTINES	04 EMERGENT AND PRE-LITERACY IN CHILDREN

SOME EXPLANATIONS

<p>WHAT IS SPEECH?</p> <p>How we say sounds & words.</p> <p>EXAMPLE</p> <p>For example, the sound /th/ in the word "think".</p>	<p>WHAT IS LANGUAGE?</p> <p>The symbols & patterns that we use to carry our thoughts according to the language we are using with the people we are around.</p> <p>EXAMPLE</p> <p>For example, the word "heita".</p>	<p>WHAT IS COMMUNICATION?</p> <p>How we exchange information & ideas with each other.</p> <p>EXAMPLE</p> <p>For example, writing, speaking & using hand signs</p>
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01

WHO ARE WE & WHAT DO WE DO?

02

HOW DOES LANGUAGE IN MULTILINGUAL CHILDREN LOOK AND TIPS TO HELP

MULTILINGUALISM IN CHILDREN

Types of bilingualism

Sequential -



- Simultaneous



03

HOW TO STIMULATE LANGUAGE IN DAILY ROUTINES



MULTILINGUALISM IN CHILDREN

The normal processes of second-language acquisition:

- Interference / transfer: communicative behaviours transferred.
- Fossilization & Interlanguage: 2nd language errors still present
- Silent period: 2nd language learner - quiet - active listening
- Code-switching: change between 2 languages
- Language loss: 1st language becomes poorer



STIMULATING LANGUAGE IN DAILY ROUTINES

- Stimulating language in daily routines e.g. meal time, bathing, bed time, can help your child to learn language
- The learning of language occurs in natural environments such as at home, at church, at the shops rather than just academic environments like at school
- Speak to your child as much as possible throughout the course of the day



TIPS FOR STIMULATING LANGUAGE IN MULTILINGUAL CHILDREN

- Learning two languages depend on the amount and type of practice the child gets, as well as exposure.
- There are benefits to learning two languages.
- There are various things which can be done to stimulate language in multilingual children



04

EMERGENT AND PRE-LITERACY IN CHILDREN



#1. LITERACY DEVELOPMENT

This is the different developmental stages that children go through as they learn to read, spell and understand .

This process starts long before children are able to read and write



#1. LITERACY DEVELOPMENT



FOR EXAMPLE



#2. BUILDING BLOCKS FOR LEARNING TO READ AND WRITE.

- Vocabulary
- Story understanding
- Conversation
- Print knowledge
- Sound awareness





STIMULATING LANGUAGE IN DAILY ROUTINES

- Talk to your child while bathing, dressing, and feeding them etc. Also have back-and-forth exchanges in conversation
- Describe what you are doing to them throughout the day for example when sweeping the floor
- Sing songs and nursery rhymes, for example Twinkle-twinkle-little star, Shosholoza, to your child and read them books
- Repeat words and phrases to them
- Ask them open-ended questions
- Introduce them to new words everyday
- Playing and talking with your child

WHY DO WE SAY DAILY ROUTINES ARE THE BEST?

- Children learn language in their most natural setting
- It is teaching them words that they use in their everyday life
- It creates a pressure-less environment to learn language without being scared of making mistakes
- Playing and talking with your child

Shared book reading

Shared book reading benefits children by helping them learn language that is based on a specific contexts.

For example, if you are reading a book about "Tsep's first day at the zoo". You will helping your child

- understand what happens in a zoo situation.
- Things to do during shared book readings:
 - Show your child the pictures and tell them what the story is about.
 - Tell them the different characters in the book (Elmo the elephant, Gigi the giraffe, Lulthando the Lion.)
 - Tell them what is happening in the beginning, the middle and the end.

This is equipping your child with the skills needed in later academic learning

RED FLAGS FOR LANGUAGE DEVELOPMENT

- No babbling by 9 months.
- No first word by 15 months.
- No consistent words by 18 months.
- Not combining words by 24 months
- Difficulty following simple instructions and saying less than 50 words at 24 months
- Slowed or stagnant speech development.
- Problems understanding your child's speech at 24 months of age, or strangers having problems understanding your child's speech by 36 months of age.
- Difficulty pronouncing words at 36 months
- Not showing an interest in communicating.
- Not responding consistently or at all when spoken to or to environmental sounds.

If you require further information:

- 012 420 2949 or 012 420-2357 or 012 420-2816.

Physical address:

Communication Pathology Building 2-11
Department of Speech-Language Pathology and Audiology
Corner of Lynnwood Road and Roper Street, Hatfield
Private Bag X20, Hatfield, 0028
esedra.kruger@up.ac.za | Tel: 012 420 2949



HOW DOES LANGUAGE IN MULTILINGUAL CHILDREN LOOK AND TIPS TO HELP

1 What is multilingualism?

When someone is able to understand and express themselves in more than one language.

2 There are two types of multilingualism:

Simultaneous: When children learn two languages from a very young age (2-4 years). They will speak in both languages very well, if they are exposed to both languages a lot. However, if there is a delay, there will be a delay in both languages.

Sequential: When there is consistent experience in one language from birth, and then the second language is only learnt only later in childhood, after 4 years old. One language will be dominant but an additional language can still be learnt.

3 THE NORMAL PROCESSES OF SECOND-LANGUAGE ACQUISITION:

Second language acquisition is when someone learns a language in addition to their home language, when they learn another language this may happen:

- **Interference / transfer:** communicative behaviors transferred. This typically occurs in sequential bilingualism rather than simultaneous bilingualism. For example, a learner might use the word order or pronunciation from isiZulu when speaking English
- **Fossilization & Interlanguage:** 2nd language errors still present
- **Silent period:** 2nd language learner - quiet - active listening
- **Code-switching:** change between 2 languages
- **Temporarily forgetting language:** 1st language becomes poorer



LANGUAGE STIMULATION TECHNIQUES

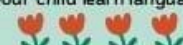


These are normal stages, of your child's development, there is no reason to be concerned.

Support for stimulating language in multilingual children

Being exposed and speaking more than one language is not a deficit but an asset for a child. If the child has language difficulties, it would be across languages. Everyone in SA is at least bilingual

1. Start as early as possible - begin using the different language with your child as soon as possible. The more input they get the better the outcomes.
2. Support your child - by creating opportunities for them to use their language everyday. The more they practice the languages, the better they will be
3. Practice over perfection - encourage your child to use their languages even if they make some mistakes such as mixing languages in a sentence. Don't worry about this, it is a normal part of learning and using more than one language at a time. Exposure and practice are needed to build their languages
4. Singing nursery rhymes and songs such as Twinkle-Twinkle-Little Star, Shosholoza is a great way to introduce another language to your child and help your child learn language



Appendix E: Informed consent for Tiny Hearts Pre-Primary School



Faculty of Humanities

Fakulteit Geesteswetenskappe
Lefapha la Bomotho

Department of Speech-Language Pathology and Audiology



WHO Collaborating Centre for Prevention of Deafness and Hearing Loss



Title of research: caregivers' perspectives of a linguistically and contextually adapted early childhood developmental milestone guide

Principal Investigators:

Zeneera Bahadoor, Mbali Masekela, Kabuba Masule & Palesa Molongoana

Supervisors:

Dr Renata Eccles, Dr Maria du Toit & Dr Shabnam Abdoola

Institutional contacts:

renata.mosca@up.ac.za or u21658732@tuks.co.za

Dear Caregiver,

We are final year Speech-Language Pathology students from the Department of Speech - Language Pathology and Audiology, University of Pretoria. We are doing research and would like to ask you to join our study. We want to hear your views, as a caregiver of a young child, regarding a new resource. The resource is a developmental milestone guide that was recently adapted for South African families with young children from birth to 47 months (3 years 11 months). The adapted developmental milestone guide gives you information about the development of children from birth to 47 months and was adapted to increase linguistic and contextual relevance in South Africa. It provides examples of what children can be expected to do developmentally at different ages for talking, moving, and more.

Description of the research:

Should you agree to join our study, you will be invited to attend one of three data collection sessions. These dates will be sent to you using your contact details provided on the consent form below. During data collection, you will be given the adapted developmental milestone guide and asked to read and then answer some questions about it. The answers given will be used to improve the adapted developmental milestone guide. This should take about 45 minutes in total. We also would like to audio record the interview for our records to help us remember what you have answered. The interview will be done in a quiet area at Confidence College Kidicol. At the same time, caregivers who are not being interviewed will be given a talk about how to support early childhood development.

Inclusion Criteria

Should you want to be part of the study, you need to be one of the main person that takes care of the child/children (at least one child between birth to 47 months), live in Tshwane and nearby areas, have a child who goes to the school, and be able to understand and speak basic English.

Potential risks & discomforts and rights as a research participant:

There are no risks in our study. You will not be paid to take part in the study. There are no costs involved for you to be part of the study and the study will not affect the schooling received at Confidence College Kidicol. You can choose to be part of the study. You can stop at any time without giving a reason. It will not affect your access to the schooling provided at Confidence College Kidicol.

Room 3-4, Communication Pathology Building
University of Pretoria, Private Bag X20
Hatfield 0028, South Africa

Tel +27 (0)12 420 2814 | Fax +27 (0)12 420 2355

Email Renata.mosca@up.ac.za | www.up.ac.za/faculty-of-humanities


Potential benefits:

Early childhood development is important, and we want to help caregivers get reliable and relevant information that will help them support their children’s early childhood development. Before the resource can be finished, we need to first know what you – as a South African caregiver, think of the adapted developmental milestone guide. You will also get to keep this milestone guide and, if you give us your contact details at the end of this form, we can send you the final version. The results of the study will help by showing the researchers if the adapted milestone guide can be useful for South African caregivers of young children as well as how such information can be shared.

Confidentiality

Only the researchers and supervisors will know your name. Results will be presented confidentially, in a way that your identity will remain unknown. There will be a storage place where the hard copy of all your information and audio recordings will be kept safe locked in room 3-4 at the Department of Speech-Language Pathology and Audiology at the University of Pretoria for a minimum of 10 years.

Kind regards



Zeneera Bahadoor



Kabuba Masule



Mbali Masekela



Palesa Molongoana



Dr Renata Eccles



Dr Shabnam Abdoola



Dr Maria du Toit



Prof J. van der Linde

Head of the Department of Speech-Language Pathology and Audiology

Written Consent Statement:

- I agree to participate in the study titled "Caregivers' perspectives on an adapted developmental milestone guide".
 - I agree, my responses will be kept confidential. No personal information will be shared. My name will be changed to a label. For example, The name 'Katlego' will be changed to Participant I.
 - I agree with the researchers keeping voice recordings safe for a minimum of 10 years.
 - I have read the information in the consent form in detail or someone has read the information in the consent form to me in detail.
 - I understand the reason, steps and the possible risks/discomforts and benefits of the study.
 - I was given enough time to think about the study.
 - I was able to ask questions and have received answers.
- I understand that I am free to leave the study at any time for any reason and the choice to stop taking part will not affect services at the Confidence College Kidicol.

Information can be used in future studies **YES/ NO**

Verbal consent statement:

I, the interviewer, _____, have read and have explained fully to the participant, named _____, the informed consent document, which describes the nature and purpose of the study in which I have asked him/her to participate. The explanation I have given has mentioned both the possible risks and benefits of the study. The participant indicated that he/she understands that he/she will be free to withdraw from the study at any time for any reason and without affecting services at the Confidence College Kidicol. I hereby confirm that the participant has agreed to participate in this study.

Name (print) and signature of participant **Date**

Name (print) and signature of researcher obtaining consent **Date**

Contact details to receive data collection dates

Phone number: _____, Email address: _____, Alternative contact: _____

To receive the final guide, kindly write your contact details:

Phone number: _____, Email address: _____, Alternative contact: _____

Appendix F: Informed consent for Confidence College (Kidicol)



Faculty of Humanities

Fakulteit Geesteswetenskappe
Lefapha la Bomothe

Department of Speech-Language Pathology and Audiology



WHO Collaborating Centre for Prevention of Deafness and Hearing Loss



Title of research: caregivers' perspectives of a linguistically and contextually adapted early childhood developmental milestone guide

Principal Investigators:

Zeneera Bahadoor, Mbali Masekela, Kabuba Masule & Palesa Molongoana

Supervisors:

Dr Renata Eccles, Dr Maria du Toit & Dr Shabnam Abdoola

Institutional contacts:

renata.mosca@up.ac.za or u21658732@tuks.co.za

Dear Caregiver,

We are final year Speech-Language Pathology students from the Department of Speech - Language Pathology and Audiology, University of Pretoria. We are doing research and would like to ask you to join our study. We want to hear your views, as a caregiver of a young child, regarding a new resource. The resource is a developmental milestone guide that was recently adapted for South African families with young children from birth to 47 months (3 years 11 months). The adapted developmental milestone guide gives you information about the development of children from birth to 47 months and was adapted to increase linguistic and contextual relevance in South Africa. It provides examples of what children can be expected to do developmentally at different ages for talking, moving, and more.

Description of the research:

Should you agree to join our study, you will be invited to attend one of three data collection sessions. These dates will be sent to you using your contact details provided on the consent form below. During data collection, you will be given the adapted developmental milestone guide and asked to read and then answer some questions about it. The answers given will be used to improve the adapted developmental milestone guide. This should take about 45 minutes in total. We also would like to audio record the interview for our records to help us remember what you have answered. The interview will be done in a quiet area at Tiny Hearts Pre Primary. At the same time, caregivers who are not being interviewed will be given a talk about how to support early childhood development.

Inclusion Criteria

Should you want to be part of the study, you need to be one of the main person that takes care of the child/children (at least one child between birth to 47 months), live in Tshwane and nearby areas, have a child who goes to the school, and be able to understand and speak basic English.

Potential risks & discomforts and rights as a research participant:

There are no risks in our study. You will not be paid to take part in the study. There are no costs involved for you to be part of the study and the study will not affect the schooling received at Tiny Hearts Pre Primary. You can choose to be part of the study. You can stop at any time without giving a reason. It will not affect your access to the schooling provided at Tiny Hearts Pre Primary.


Potential benefits:

Early childhood development is important, and we want to help caregivers get reliable and relevant information that will help them support their children’s early childhood development. Before the resource can be finished, we need to first know what you – as a South African caregiver, think of the adapted developmental milestone guide. You will also get to keep this milestone guide and, if you give us your contact details at the end of this form, we can send you the final version. The results of the study will help by showing the researchers if the adapted milestone guide can be useful for South African caregivers of young children as well as how such information can be shared.

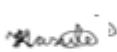
Confidentiality

Only the researchers and supervisors will know your name. Results will be presented confidentially, in a way that your identity will remain unknown. There will be a storage place where the hard copy of all your information and audio recordings will be kept safe locked in room 3-4 at the Department of Speech-Language Pathology and Audiology at the University of Pretoria for a minimum of 10 years.

Kind regards




Zeneera Bahadoor



Kabuba Masule



Mbali Masekela



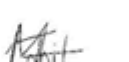
Palesa Molongoana



Dr Renata Eccles



Dr Shabnam Abdoola



Dr Maria du Toit



Prof J. van der Linde

Head of the Department of Speech-Language Pathology and Audiology

Written Consent Statement:

- I agree to participate in the study titled "Caregivers' perspectives on an adapted developmental milestone guide".
 - I agree, my responses will be kept confidential. No personal information will be shared. My name will be changed to a label. For example, The name 'Katlego' will be changed to Participant I.
 - I agree with the researchers keeping voice recordings safe for a minimum of 10 years.
 - I have read the information in the consent form in detail or someone has read the information in the consent form to me in detail.
 - I understand the reason, steps and the possible risks/discomforts and benefits of the study.
 - I was given enough time to think about the study.
 - I was able to ask questions and have received answers.
- I understand that I am free to leave the study at any time for any reason and the choice to stop taking part will not affect services at the Confidence College Kidicol.

Information can be used in future studies **YES/ NO**

Verbal consent statement:

I, the interviewer, _____, have read and have explained fully to the participant, named _____, the informed consent document, which describes the nature and purpose of the study in which I have asked him/her to participate. The explanation I have given has mentioned both the possible risks and benefits of the study. The participant indicated that he/she understands that he/she will be free to withdraw from the study at any time for any reason and without affecting services at the Confidence College Kidicol. I hereby confirm that the participant has agreed to participate in this study.

Name (print) and signature of participant **Date**

Name (print) and signature of researcher obtaining consent **Date**

Contact details to receive data collection dates

Phone number: _____, Email address: _____, Alternative contact: _____

To receive the final guide, kindly write your contact details:

Phone number: _____, Email address: _____, Alternative contact: _____

Appendix G: Interview Schedule

Interview Schedule probing the perspectives of caregivers of young children (birth to 47 months) regarding an adapted developmental milestone guide for South African families in a low-resourced setting:

Interview questions	Answer
Demographics	
<p>Are you the main caregiver of a child that is between the ages of birth to 47 months (3 years 11 months)</p> <p><i>Prompt: Do you take care of a child between the ages of birth to 47 months (3 years 11 months)</i></p>	
How old is the child in years and months?	
<p>What is your relationship to the child ?</p> <p><i>Prompt: Are you the mother, father, guardian, grandparent, sibling, aunt, uncle, or cousin?</i></p>	
How many siblings does the child have?	
<p>What is the birth order of the child?</p> <p><i>Prompt: Are they the youngest, middle, or oldest child?</i></p>	
<p>Who looks after the child during the day?</p> <p><i>Prompt: Who looks after the child most of the time?</i></p>	
<p>How do you feel regarding your child's development?</p> <p>Likert Scale: very worried - worried- not worried- think developing well- developing very well</p> <p><i>Please tell me more. .</i></p>	
Caregiver Information	
How old are you?	
<p>What is your home language?</p> <p><i>Prompt: Are you Afrikaans, English, Ndebele, Pedi, Sotho, Swati, Tswana, Swati, Zulu, or other</i></p>	

<p>What is your highest level of education?</p> <p><i>Prompt: Did you complete matric/grade 10/ tertiary?</i></p>	
<p>Are you working? What do you do for work ? (ask only if they said yes)</p>	
Perspectives of ECD milestone guides in general	
<p>Have you ever looked for information from any resources or people regarding early/young child development?</p>	
<p>Have you used a milestone guide before, that informed you of a young child's development?</p> <p>YES/NO <i>Prompt: A milestone guide is a resource that guides you on what your child is expected to be doing at certain ages. If so, which milestone guide have you read?</i></p>	
<p>If not, why have you not used a milestone guide before?</p> <p><i>Prompt: Have you not been provided with one? / The language the milestone was in, is one that I am not familiar with. I am unable to read. / I was not sure how to use it/ I did not know you get these guides</i></p>	
<p>What comments did you make on the guide?</p>	
<p>How did you find the developmental milestone guide?</p> <p>Likert Scale: unhelpful - slightly unhelpful - no-comment- slightly helpful - extremely helpful</p>	
<p>What did you like the most about this developmental milestone guide?</p>	
<p>What did you like the least about this developmental milestone guide?</p>	
<p>What would you change about this developmental milestone guide?</p>	
<p>How likely are you to use such a resource?</p> <p>extremely unlikely - unlikely - neutral - likely - extremely likely</p>	

Would you recommend this developmental milestone guide to another caregiver and why?	
Linguistic and contextual applicability of an adapted developmental milestone guide	
This guide was in English. What language would you prefer the information regarding the development of a child to be in and why?	
How easy is it to understand the developmental milestone guide right now? Likert scale: very easy - easy - fair - difficult -very difficult	
Were the words and examples used familiar to you? If so, which ones? <i>Prompt: Are there some words that you struggled with/did not understand? Could you perhaps show them to me? Did you circle any words you didn't understand?</i> <i>Prompt: The word "coo"</i>	
Do you think the ages in the milestone guide are correct or would you expect your child to do some things earlier or later? <i>Prompt: Sitting by 6 months - do you think this is too late or too early?</i>	
Was there anything that you read in the guide that you would have said in an easier way? This is important for us to know as we want caregivers to be able to easily understand the information in the guide. <i>Prompt: The 3 m for 3 months</i>	
Do you have the objects that are needed in the developmental milestone guide? <i>Prompt: For example do you/ do you not have a three to four piece puzzle?</i>	
Dissemination (using the milestone guide)	
Would you want to use this milestone guide that tells you about a young child's development again?	

<p><i>Prompt: why do you want to get this milestone guide</i></p>	
<p>Does the milestone guide show you what your child can do/cannot do? If so, can you give an example?</p>	
<p>How would you prefer to get the developmental milestone guide, if you could choose how to receive it?</p> <p>Prompt:</p> <ol style="list-style-type: none"> 1. <i>SMS</i> 2. <i>Email</i> 3. <i>Whatsapp</i> 4. <i>Hardcopy</i> 5. <i>Verbal presentation</i> 6. <i>Via Voice notes on a social media platform of your choice (Telegram, Whatsapp, Imessage, Signal)</i> <p>If you have more than one option, please can you order them from the one you want most to the one you want least.</p>	
<p>Why would you prefer to get the developmental milestone guide in that specific way?</p>	
<p>How often would you like to receive it?</p> <p>Prompt:</p> <ol style="list-style-type: none"> 1. <i>every two weeks</i> 2. <i>once a month</i> 3. <i>every 6 months</i> 4. <i>once a year</i> 5. <i>once off (The full guide all at once)</i> 	
<p>Now that you have read the guide is there anything else that we have not said about the guide that you would like to add?</p> <p><i>Prompt: Please tell me more about that?</i></p>	

Appendix H : Milestones identified by participants to be amended

Age	Original Developmental milestone guide (CDC, 2017)	Bellini 2024, unpublished Masters	Amendment
Not applicable			Disclaimer on how to use developmental milestone guide: If your child is not able to do the milestones at his / her age or you are worried about his / her development; consult a health professional, see key at the end of milestone guide.
Not applicable	Not applicable	Not applicable	If your child was born premature; remember to use his / her corrected age until 24 months old.
Not applicable	Not applicable	Not applicable	For the months not included at a milestone guide, note no new item is developing.
Social emotional domain			
3 months	Copies movements and facial expressions like smiling and frowning	Copies movements and facial expressions like smiling and growing. (Age range adapted from 4m to 3m)	Copies movements and facial expressions like smiling and growing.

18 months	Temper tantrum	Tantrums	Tantrums may occur.
36 months	Temper tantrum	Tantrums	Tantrums may occur.

If your child does not meet the milestones in his/ her age range consult a Speech-Language therapist /an Occupational therapist

Language & Communication

2 months	Coos, makes gurgling sounds	Coos with (aaa)/ throaty/ gurgling sounds.	Make string of vowel sounds eg “ah-ah-ah-ah”, “ooh-ooh-ooh”, and throaty/gurgling sounds eg “k-k-k-k.”
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If your child does not meet the milestones in his/ her age range consult a Speech-Language therapist / Audiologist

Movement/ physical development domain

If your child does not meet the milestones in his/ her age range consult a Physiotherapist/Occupational therapist

Feeding skills * (Arvedson, 2006)

1 month			Sucks fingers when close to mouth.
2 months			Brings food to mouth while laying on back.
3 months			Brings objects to mouth.
3.5 months			Identifies nipple or bottle by looking.
5.5 months			Holds a bottle without any help needed.
6 months			Drinks from the cup when held by someone.
6.5 months			Feeds self biscuits.

9 months			Holds soft biscuits in mouth without biting.
9 months			Bangs spoon on table.
9.5 months			Copies stirring a spoon in a bowl/cup.
12 months			Bites through soft biscuits.
12 months			Holds cup with some spilling when drinking.
12 months			Drinks from a straw.
15 months			Scoops food with spoon and turns the spoon while placing in the mouth.
18 months			Stops drinking from the bottle.

20 months			Holds small cup in one hand with little spilling.
24 months			Bites into food with different thickness, eg. meat, potatoes, bread.
30 months			Pours from a small cup.
36 months			Feeding self with a fork.
If your child does not meet the milestones in his/ her age range consult a Speech-Language therapist			

*Milestone guide adapted from CDC,2017 ; Arvedson ,2006 ; Bellini, 2024 unpublished masters

Appendix I : Adapted Developmental Milestone guide with final amendments

<p>Amendment: Disclaimer on how to use developmental milestone guide:</p> <ul style="list-style-type: none"> • If your child is not able to do the milestones at his / her age or you are worried about his / her development; consult a health professional, see key at the end of milestone guide • If your child was born premature; remember to use his / her corrected age until 24 months old. • For the months not included at a milestone guide, please note development is still occurring 		
Item	Age	Adapted Milestone
Social emotional domain		
1	3 months	Copies movements and facial expressions like smiling and growing.
2	9 months	May be shy/nervous/ afraid of strangers.
3	9 months	Prefers a familiar adult.
4	9 months	Has a favourite household item/ toy/ object.
5	12 months	Is shy/nervous/ afraid of strangers.
6	12 months	Cries when caregiver leaves.
7	12 months	Shows caregiver they want to play with the adult/needs help (e.g. gives object they need help with).
8	12 months	Plays games such as hiding and showing face from behind towel/ joins in on songs with actions.
9	18 months	Tantrums may start.
10	18 months	May be shy/nervous/ afraid of strangers.
11	18 months	May cling/stay close to caregiver in new situations.
12	36 months	Separates easily from caregiver.
13	36 months	“36 months - tantrums are still occurring.”
<p>If your child does not meet the milestones in his/ her age range consult a Speech-Language therapist or an Occupational Therapist</p>		
Language/ Communication Domain		
14	2 months	Make string of vowel sounds eg “ah-ah-ah-ah”, “ooh-ooh-ooh”, and throaty/gurgling sounds eg “k-k-k-k.”

15	4 months	Begins to make repeated sounds such as “bababa.”
16	4 months	Makes repeated sounds with expression and copies sounds he hears.
17	6 months	Strings vowels together (“ah”, “eh”, “oh”) and likes to take turns with caregiver while making sounds.
18	24 months	Points to household objects.
19	24 months	Points to pictures when they are named (e.g. family photos/ newspaper pictures).
20	36 months	Understands position words in their home language (e.g. the concept of “in”, “on”, “under”).
21	36 months	Uses words to describe position in their home language (e.g. the concept of “in”, “on”, “under”).
If your child does not meet the milestones in his/ her age range consult a Speech-Language therapist/ Audiologist		
Cognitive (learning, thinking, problem-solving) domain		
22	9 months	Picks up small items like rocks/ beans between thumb and index finger.
23	12 months	Looks at the right picture (e.g. food brochure or book) when it is named.
24	24 months	Completes words and sentences in familiar songs.
25	18 months	Shows interest in teddy bear/ soft toy/ doll by pretending to feed.
26	24 months	Begins to sort similar objects and objects of the same colour (e.g. clothes or socks).
27	24 months	Builds towers of 4 or more items (e.g. blocks, tupperware, cups).
28	24 months	Follows two-step instructions such as “pick up your shoes and put them by the bed.”
29	24 months	Names items on a picture (e.g. magazines, newspaper, food brochure) such as “banana”, “shoe”, “dog.”
30	36 months	Can work items such as toys with a switch, opening a lid, closing a tap.
31	36 months	Plays pretend games with people/toys such as “teacher-teacher” and “mommy-child.”
32	36 months	Does puzzle with 3- or 4- piece puzzles (e.g. puts together a picture cut into 3 or 4 pieces).
33	36 months	Understands what “two” means (e.g. Child takes two bananas when caregiver says “take two”).

34	36 months	Turns pages of magazine, newspaper or book.
35	36 months	Builds towers of more than 6 items (e.g. blocks, Tupperware, cups).
If your child does not meet the milestones in his/ her age range consult a Speech-Language therapist/ Occupational therapist		
Movement/ physical development domain		
36	2 months	Can hold head up and begin to push up when lying on tummy on bed/floor/ on caregivers chest.
37	4 months	Tries to roll from tummy to back.
38	4 months	Can hold a toy/object and shake it and tries to swing/ swipe at dangling toys/objects such as keys.
39	4 months	When lying on tummy, pushes up to rest on elbows.
40	9 months	Crawls on hands and knees.
41	18 months	Can run and step up onto a step/object.
42	24 months	Kicks a ball.
43	24 months	Walks uphill/downhill holding onto a hand or up and down stairs holding on.
44	24 months	Throws ball/object above head.
45	24 months	Makes or copies straight-lines and circles with crayons/ using a stick to draw in sand.
46	36 months	Climbs well (onto furniture, jungle gym or people).
47	36 months	Walks uphill/downhill holding onto a hand or up and down stairs holding on.
If your child does not meet the milestones in his/ her age range consult a Physical therapist/ Occupational therapist		
Feeding skills* (Adapted from Arvedson ,2006)		
48	1 month	Sucks fingers when close to mouth.
49	2 months	Brings food to mouth while laying on back.
50	3 months	Brings objects to mouth.
51	3.5 months	Identifies nipple or bottle by looking.
52	5.5 months	Holds bottle without any help needed.
53	6 months	Drinks from cup when held by someone.
54	6.5 months	Feeds self biscuits.

55	9 months	Holds soft biscuits in mouth without biting.
56	9 months	Bangs spoon on table.
57	9.5 months	Copies stirring a spoon in a bowl/cup.
58	12 months	Bites through soft biscuit.
59	12 months	Holds cup with some spilling when drinking.
60	12 months	Drinks from a straw.
61	15 months	Scoops food with spoon and turns spoon while placing in the mouth.
62	18 months	Stops drinking from the bottle.
63	20 months	Holds small cup in one hand with little spilling.
64	24 months	Bites into food with different thickness, eg. meat, potatoes, bread.
65	30 months	Pours from small cup.
66	36 months	Feeding self with a fork.
If your child does not meet the milestones in his/ her age range consult a Speech-Language therapist		

*Milestone guide adapted from CDC,2017; Arvedson ,2006; Bellini, 2024 unpublished masters)