

GG2099775 Melusi “Phela Hantle” Project

Progress Report – January 2022 report

“Health is precious than time, so better health have better good times.” – Merlin8Thomas

This month’s report focuses on oral health and nutritional research of the children under five in Melusi. The department of Family Medicine, COPC Research Unit and department of Dentistry, UP commenced conducting oral health surveillance end of 2021 (with ethics approval at the UP-Ethics committee) to help inform future health and dental interventions in this community. The first results are included at the end of this report.

The program activities and interventions continued to support maternal and childcare. Themes for January included: Covid-vaccinations and a Covid booster vaccination. Cardio-vascular disease. Taking care of one’s mental health and psychological well-being.



Image of oral health and dietary intake screening at an early learning centre in Melusi

Total Number of Direct Beneficiaries

Primary health care consultations and dispensing of medicine were offered at no cost to 263 patients on site in Melusi. 409 patients were screened within the community for Covid symptoms. 149 patients received Covid vaccinations on-site. 4 patients were tested for Covid: 1 tested positive. For more details on the patients seen please view the attached COPC Gauteng Province summary statistical report for Jan 2022.

A total number of 30 health professional's representative of various organizations working in the community attended the community interventions, including the oral health and diet research and cooking interventions at the local early learning centers. During Nov a nutritional and oral health research and dietary intake assessment and support program that was approved by the University of Pretoria's ethics committee commenced, this is focused on children and the assessment and support of children <5 continued in December. See more about this at the end of the report.

Number of Maternal and Child Health Professional's Trained

Patients were educated in groups as they were seen at the clinic (263). The educational sessions were facilitated by environmental health officer, Rebaone Molebatsi, for the community health workers and patients, and by Marion Beeforth for the nutritional interventions. The CHWs were expected to participate and assist in the oral health research and diet interventions after they were trained in Nov/Dec.



Anthropometric data collection recording by community health workers at the pilot school Regae Day Care

Thirteen (13) community health workers and ten (10) fieldworkers were trained weekly within the community and as part of the weekly team meetings. The focus was on supporting the learning activities as part of the CHWs service-learning activities within the community. The theme for the month of January focused on preventative care and mental health.

The teachers from all 15 early learning centers (and all the parents of the children attending the schools) were invited to allow their children to participate in the oral health research and educational/nutritional interventions.



Vegetable gardens were started at some of the creches

Number of mothers receiving ante-/post-natal care

145 patients received contraceptives within the Melusi community at the healthhub. Pregnant mothers that are identified on site are referred for ANC (ante-natal care) to the nearby Daspoort clinic that has more services and resources.

Nutritional Status Assessment and Interventions

41 children consulted for a clinical condition and were assessed for their nutritional status at the health hub. Two hundred and forty (240) children <5 received micro-nutrient supplementation at early learning centres in Melusi for December before the schools closed. Daspoort clinic is the referral clinic for Melusi patients to receive childhood immunization. Nutritional assessments and interventions for children continued at the early learning centres.

10 children from Melusi were seen at Daspoort clinic over two consecutive Thursdays and consulted on growth monitoring and diet. Two children were in foster-care and needed social support/consultation, they were referred to the social worker at the clinic.

The rest of this report summarizes the initial results of the pilot Melusi dental research.

Title: To determine the oral health status, dietary intake and anthropometrical measurements at early childhood development centres in an informal settlement in Pretoria, South Africa

INCLUSION AND EXCLUSION CRITERIA

Inclusion criteria

- All early learning centres in Melusi were included that were open and functioning at the time of the data collection phase of the research.
- All children between the age of 3-6 years were included in the study if their parents provided consent and they were present at school during data collection (all days).

Exclusion criteria

- Children who were younger than 3 years and older than 6 years were not included in the study.
- Children whose parents did not give consent to participate in the study were excluded.
- Children who were absent on any day of data collection could not participate later.

RECRUITMENT

The non-profit forum and the community health workers of the COPC research unit were approached to identify all the Early Learning Centres in the Melusi area. All ECDs were approached to indicate the head count. A week before data collection, parents were approached to give consent that their children could participate in the data collection phase of the research. A date and time were provided for parents before school and after school on day one of data collection. The questionnaire was explained to all the parents. Parents were given the option to be assisted to complete the questionnaire in person at the ECD, in person at their home or self- complete (with telephonic follow up if incomplete).

Limitation: Some children come to school without parents, e.g., with taxi transport or no direct contact with parents and no option for a telephonic follow up.

Class register – only children 3-6 years are eligible and parents were contacted with an information letter with the consent letter attached. Anthropometry are done together with the dental data collection a week before the diet data collection.

METHODS

Objectives and tools used in the study

	Objectives	Tools
1	To explore and describe socio economic and demographic characteristics of the children Melusi	Structured questionnaire (Addendum)
2	To assess and describe the nutritional status of the children in Melusi	Anthropometric measurements weight, height and mid-upper arm circumference (Addendum SOP measurement and cut-off values
3	To explore and describe dietary intake of the children	24 h dietary recall, multiple pass method of two

		consecutive week days and one weekend day
4	To assess and describe the macronutrient and micronutrient intake of children under 5 years at Early Learning centres at Malusi	24 h dietary recall Food finder analysis (Addendum)

Dental research Data collection tools

The data collection will consist of three parts; an oral examination, an anthropometric examination and a diet and oral hygiene survey that will be sent to the parents to complete. The clinical oral examinations will be performed in the ECDCs under fluorescent lighting with the participant sitting on a school chair according to the World Health Organization (WHO) criteria¹⁷. The decayed, missing and filled teeth (dmft) index will be used to record the caries status of the primary dentition only. The permanent dentition will be excluded. (should it not read the non-permanent dentition. Only teeth with cavitated caries will be diagnosed as decayed while those with early white spot lesions or fissure sealants will be recorded as sound. A data collection sheet will be used to capture all the necessary clinical diagnosis (Appendix A).

The pulpal involvement, ulceration, fistula and abscess (pufa) index will be used to measure the severity of dental caries¹⁵. Decayed teeth will be classified as 'p' if there is a visible pulp present, 'u' if there is ulceration of the oral mucosa due to root fragments, 'f' for a fistula and or 'a' for an abscess. Soft tissue lesions from the surrounding tissues that are not related to a tooth or caries will be recorded under the soft tissue lesions criteria discussed below. Only one score will be assigned per decayed tooth.

The prevalence and severity of dental erosion will be measured using the Basic Erosive Wear Examination Index (BEWE)²⁶. The buccal, occlusal and palatal surfaces of all primary teeth will be examined, and the highest score for each sextant will be recorded. The sum of the scores from each sextant will be added to get the final individual score.

Anthropometry

A dietitian and dietitian student with two community health workers conducted the anthropometric measurements on the day of the research. The dietitian instructed the student on the use of the equipment. The student followed the standard anthropometric procedure (appendix SOP anthropometric measurements). One community health worker verified the child's consent form and completed the name and surname and date of birth on the record form. The second community health worker recorded the reading. The dietitian was present in the room and oversaw the processes (consent, correct learner, date of birth, correct use of equipment).

Anthropometry of 39 children within the category 3-6 years were collected for the pilot study.

Diet intake data

The dietitian and two community health workers observed and assisted the principal at one of the creches on the first day of the research to make the instant porridge (no kitchen worker present on the first day). The principal used usual measurements to prepare porridge. The children's bowls were numbered according to the attendance register.



The amount of porridge was measured and recorded.





The principal confirmed the consistency of the porridge was correct.





The teacher recorded the child's name against the number. A video recording of the procedure was taken.



Plate waste was recorded on both days.





Day 3 of breakfast





Bean bags $\frac{1}{4}$ cup, $\frac{1}{2}$ cup, 1 cup and 2 cups as well as teaspoon, tablespoon and dish-spoon and the DEK photos $\frac{1}{4}$ bowl, $\frac{1}{2}$ bowl, full bowl and different level and fullspoons were used.





Day three meal preparation (covo and pap) the community health workers help prepare the meal and recorded the recipe as well as recorded the portion size perchild and the plate waste.



Covo fresh from the garden of the ECD was used for meal preparation.



Measured portion was 100 g covo and 250 g pap



Example of snacks sold in the community and listed by parents



Children lined up to receive their food

Dietary data

24-hour data recall for one weekend and two consecutive week-days were collected. Meals consumed at school were weighed. The amount dished and the amount left over were recorded. Parents were phoned and it was explained that the questionnaire will be send home to complete. The dietary information of the previous day (Sunday) was asked to complete as well as supper of the current day. One reason was that the researchers wanted the recall done as soon as possible for the recall to be accurate. Breakfast information was collected by weighing the bowl and porridge and plate waste for each child (both week-days). The second day a form with the dietary recall was send home. Parents who brought children to the school and children who fetched children were asked to verify the information supplied.

Dietary Questionnaire

ST 49
ANTHRO 29

SECTION A: Please answer all questions related to your child

No	Questions	Response
1	Age (as at last birthday) in years	3 y 8 m
	DOB	2018 - 03 - 08
2	Gender	Male <input checked="" type="checkbox"/> Female <input type="checkbox"/>
3	Name of School	Rogone
4	Class	RRR
5	Birth Position (1st born, 2nd born, 3rd born...)	1st born
6	Does your child/guardian live with one parent, both parents and a guardian?	1. Both parents <input checked="" type="checkbox"/> 2. Single parent <input type="checkbox"/> 3. Guardian <input type="checkbox"/>
7	Father's occupation	
8	Mother's occupation	
9	Father's level of education	1. No formal education <input type="checkbox"/> 2. Completed Primary School <input checked="" type="checkbox"/> 3. Completed Secondary School <input type="checkbox"/> 4. Completed university or Technicon <input type="checkbox"/>
10	Mother's level of education	1. No formal education <input type="checkbox"/> 2. Completed Primary School <input type="checkbox"/> 3. Completed Secondary School <input checked="" type="checkbox"/> 4. Completed university or Technicon <input type="checkbox"/>

SECTION B: Dental Section

No	Questions	Response
1	How often does your child eat sugar containing snacks or drinks between the main meals?	1. About 3 times a day or more <input type="checkbox"/> 2. About twice a day <input type="checkbox"/> 3. About once a day <input type="checkbox"/> 4. Occasionally; not every day <input checked="" type="checkbox"/> 5. Rarely or never eat between meals <input type="checkbox"/>
2 a	How do you clean your child's teeth?	Toothbrush / toothpaste
2 b	How often do you or your child brush his/her teeth?	1. Irregularly or never <input checked="" type="checkbox"/> 2. Once a week <input type="checkbox"/> 3. A few (2-3) times a week <input type="checkbox"/> 4. Once a day <input type="checkbox"/> 5. Twice a day <input type="checkbox"/> 6. Thrice a day <input type="checkbox"/> 7. More than thrice a day <input type="checkbox"/>
3	How often do you clean in between the teeth of your child, use dental floss?	1. Never <input type="checkbox"/> 2. Occasionally <input checked="" type="checkbox"/> 3. A few (2-3) times a week <input type="checkbox"/> 4. Once in a day <input type="checkbox"/> 5. More than one time a day <input type="checkbox"/>
4	How often does your child use toothpaste?	1. Always <input type="checkbox"/> 2. Quite often <input checked="" type="checkbox"/> 3. Seldom <input type="checkbox"/> 4. Not at all <input type="checkbox"/>

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1

5	When last did you take your child for a dental check-up?	1	Within the last 6 months	()
		2	More than 6 months to 1 year ago	()
		3	More than 1 to 2 years ago	()
		4	More than 2 to 5 years ago	()
		5	Never	()
		6	Do not remember	()

SECTION C-DIET ANALYSIS

Please give us a detailed account of your child's daily food and drink intake for 3 consecutive days. This report will enable your dentist to provide advice and guidelines regarding your child's dietary improvement if necessary. Please fill this form out as honest and complete as possible to enable the dentist to provide you with the best possible information for your child.

This table must be completed by the parent





Time at which a snack, drink or meal was consumed	Three consecutive days, must include two weekdays and one weekend day (eg. Thursday, Friday and Saturday OR Sunday, Monday and Tuesday)		
Time	Day 1	Day 2	Day 3
Example: 06h00-07h00	Coffee with milk and 2 sugars; buttermilk rusk	Tea with honey. White bread toast with butter and cheese	Orange juice
08h00-09h00	Cornflakes with full cream milk and 3 teaspoons of sugar	1 Naartjie	Oats with milk and two teaspoons of sugar
06h00-07h00	Δ Milk N100 500ml	Δ Fat Cake	Δ Porridge soft
07h00-08h00	Pap 1c	$\frac{1}{4}$ c size X2	
08h00-09h00	Δ $\frac{1}{2}$ Scramble egg	Δ Porridge	
09h00-10h00	Δ Pizza	Soft 1c	
10h00-11h00	Debonairs 1 slice	Instant Soft porridge	Δ Instant soft porridge
11h00-12h00	(Chicken & cheese) Cup cordial		30g (120-90g)
12h00-13h00	1 cup	Δ Pap	Δ Pap 300g
13h00-14h00	Δ Pap 1c	amaso saml	Spinach 60g
14h00-15h00	Chicken piece		(360g - 300g + 60g)
15h00-16h00	Wing (cooking water/onion)	Fat Cake	
16h00-17h00	Δ Pap and	Δ X2	
17h00-18h00	Chicken piece	Δ Pap	
18h00-19h00	(cooking water/onion)	Gravy	
	(2 onion & 8 tomatoes)	Reupe Spinach 49	Tomato 2 onion $\frac{1}{2}$ 2 added to Spinach

19h00-20h00




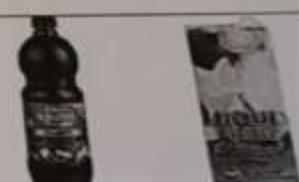


SECTION D




FREQUENCY AND QUANTITY OF SUGARS AND OIL CONSUMPTION

(Kindly indicate the amount of each of the listed food items your child has eaten in the last 24 hours and identify which picture best quantifies amount taken)

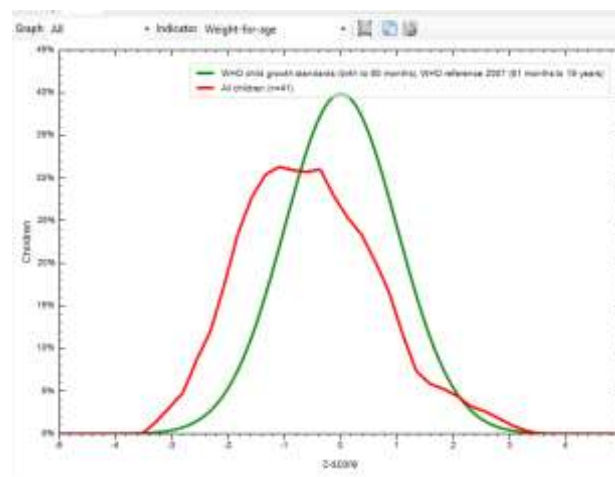
No.	Food item	Frequency	Amount	Description
1	Table sugar	Once <input type="checkbox"/> Twice <input type="checkbox"/> Thrice <input type="checkbox"/> Four times <input type="checkbox"/> More than four times <input type="checkbox"/>	Number of teaspoons <u>No</u> Number of tablespoons _____ Number of cubes _____	 No sugar in food 1-2 glasses water/day
2	Biscuits	Once <input checked="" type="checkbox"/> Twice <input type="checkbox"/> Thrice <input type="checkbox"/> Four times <input type="checkbox"/> More than four times <input type="checkbox"/>	Number of packs <u>1/2 pack</u>	
3	Sweets	Once <input checked="" type="checkbox"/> Twice <input type="checkbox"/> Thrice <input type="checkbox"/> Four times <input type="checkbox"/> More than four times <input type="checkbox"/>	Number of wraps of sweet _____ Number of sticks of lollipop <u>1</u>	
	Bread	Once <input type="checkbox"/> Twice <input type="checkbox"/> Thrice <input type="checkbox"/> Four times <input type="checkbox"/> More than four times <input checked="" type="checkbox"/>	Number of slices <u>2</u> Number of loafs (unsliced) _____	

change

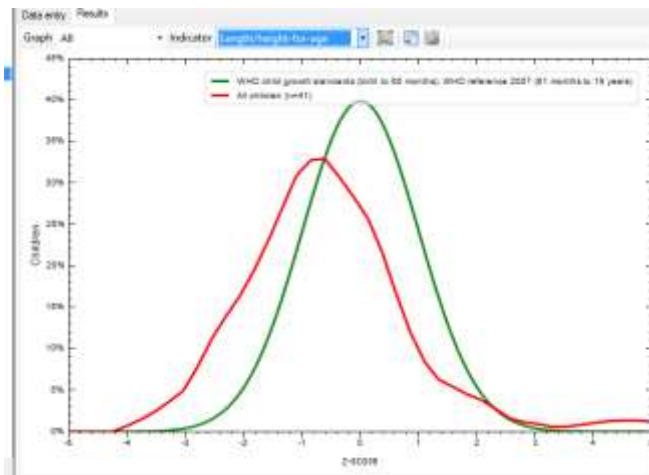
5	Cereal such as Corn flakes.	Once () Twice () Thrice () Four times () More than four times ()	Amount of cups per serving <u>NO</u>	
6	Cordial	Once () Twice () Thrice () Four times () More than four times ()	Amount of cups per serving <u>NO</u>	
7	Carbonated drink	Once <input checked="" type="checkbox"/> () Twice () Thrice () Four times () More than four times ()	Number of bottles <u>1 cup</u> Number of cans _____	
8	Fruit juice	Once () Twice () Thrice () Four times () More than four times ()	Number of bottles 350 ml <u>NO</u> Number of cups 200 ml	
9	Ice cream	Once () Twice () Thrice () Four times () More than four times ()	Number of cups or cones or ice creams <u>NO</u>	
	Chocolate	Once () Twice () Thrice () Four times () More than four times ()	Number of chocolates <u>NO</u>	

10	Cake	Once () Twice () Thrice () Four times () More than four times ()	Number of cup cakes <u>NO</u> Number of slices _____	
11	Pastries – Doughnuts, vetkoek	Once () Twice () Thrice () Four times () More than four times ()	Number of doughnuts / vetkoek <u>No</u>	
12	Oil	Once () Twice () Thrice () Four times () More than four times ()	Number of tablespoons per serving _____ <u>oil less</u> <u>1</u> <u>at</u>	

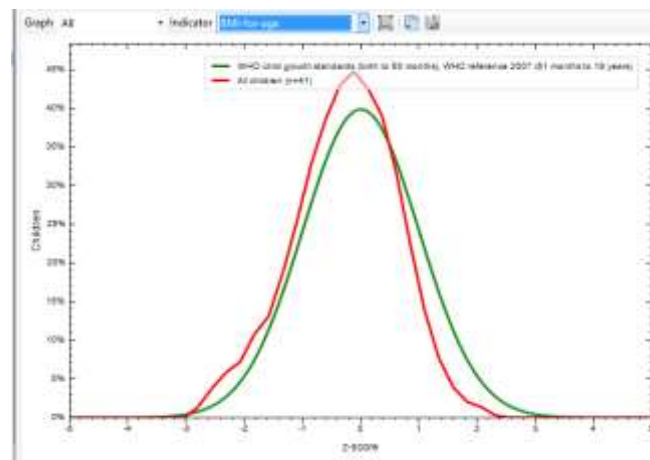
The following graphs summarize the median according to the WHO Anthropometric data compared to the first two early learning centres.



Weight for age graph

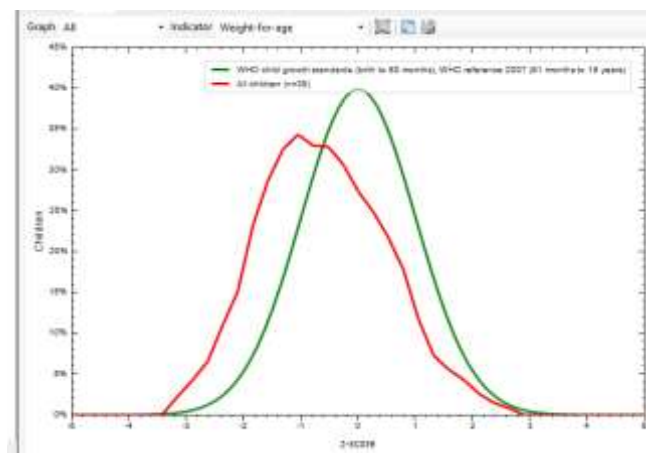


Height for age graph

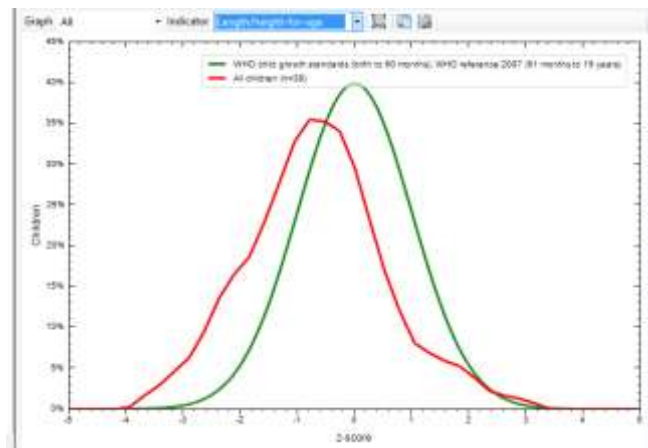


BMI for age

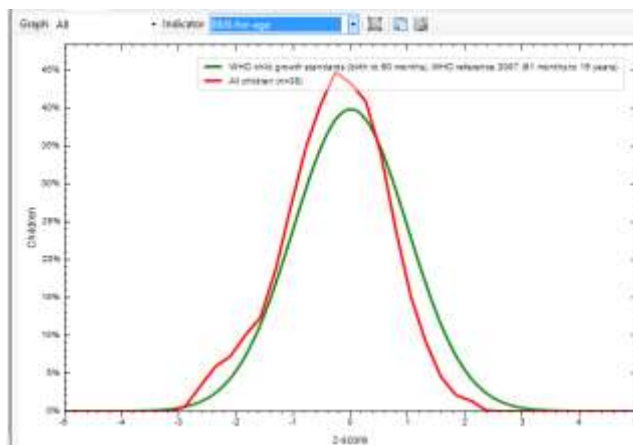
Dental survey summary of nutritional status crèche 1		
Moderate Acute Malnutrition (MAM)	2/39	5 %
Underweight	2/39	5%
Stunting	4/39	10%



Weight for age



Height for age



BMI for age

Dental survey summary of nutritional status of crèche 2		
Weight-for-height and BMI-for-age (wasting)	2/31	6%
Weight –for- age (underweight)	3/31	10%
MUAC- for -age (wasting)	1/31	3%
Height -for- age (stunting)	4/31	13%

The initial pilot data collected from the first two early learning centres indicate that despite the last year's interventions and supplementation, there are still some children with acute and chronic malnutrition. This is however much better compared to other informal settlement clinical data without interventions. It is also (in post-Covid times) less than the national average. The study will have however to be completed to make final conclusions.

The nutritional support and gardens established at the ECDs proved to have been rewarding. Below are some photos of the progress made at the local school gardens.





