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THE HEALTHY TEETH CHALLENGE

Report

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‘Healthy Teeth Challenge’

A Participatory Action Research into Oral Health amongst children age 0-12 from Mfuleni township, Cape Town, South Africa

Content

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"Local children do not go to the dentist or to the clinic for a check-up. They only go when they feel a lot of pain. When there is something wrong"

A teacher from Mfuleni township, Cape Town

Myburgh, Prof. Rob Barrie and dental nurse Ms Felicity Gcogco Tyhomfi Vanqa for taking my team and me on several interesting dental outreach programs, giving us useful information about the state of Dentistry in the townships during a Focus Group Discussion, providing us with free toothbrushes for the community of Mfuleni, and helping us with obtaining Ethical Approval and translating Informed Consent forms in isiXhosa. Your team has been very kind, welcoming and supporting. It was a wonderful academic cooperation.

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Aneesa Salie, and the private dentist in Mfuleni, Ms Shakirah Abrahams for sharing their knowledge about dentistry in the area with us. I am grateful from the bottom of my heart to these inspiring people that work very hard to provide dental treatment to those in need.

I hope that I have not left anyone out. All in all, it has been an amazing journey. I am immensely grateful for the experience and knowledge that we, as a team, were able to gather. We have learned about Ubuntu, friendship, adventure, girl power and doing research. As a team we have worked incredibly hard to make this project a success. Hopefully this report will contribute to coming one step closer to improving oral health amongst children from Mfuleni township and thereby their chances for the future.

Opinions expressed in this report are those of the stakeholders. The authors are responsible for the compilation and analysis. This report is presented to Dental Wellness Trust for discussion on how oral health amongst children in Mfuleni township (and in other townships) can be improved. It does not claim to be the 'final truth' about the root causes and outcomes of poor oral health but rather a 'draft analysis' and an invitation to continue dialogues and action.

Abstract

In South Africa there are few dentists in the townships. Dental health is found to be poor in these areas, with a large number of children experiencing toothache and consequently not going to school. In 2011 the renowned London dentist Dr. Linda Greenwall established Dental Wellness Trust (DWT), which fulfils her long-envisioned life goal to establish a dental charity to help those in need.[1] In South Africa she works together with Ms Mavis Phahlindlela, a local lady running a crèche (educare) in the township. Mavis soon became the local coordinator of the DWT program. They believe that 'Prevention is better than cure', therefore this dental charity has set up handwashing and toothbrushing programs at different educares in Mfuleni and Khayelitsha township. At the start of my research project there were 8000 children enrolled.

DWT states that 80% of the children in South African townships suffer from tooth decay. The most common cause of school absenteeism, next to diarrhoea, is toothache. Two dentists and one oral hygienist serve the whole of Mfuleni township in Cape Town, which has a population nearing 100.000 people. Many children in townships have never had a personal toothbrush, most share theirs with their family.[2] DWT has set up different programs to provide oral health education to children, handwashing and toothbrushing instruction, and a program to share information and disseminate good practice amongst dental health practitioners.[3]

Alice Grasveld is an oral hygienist and medical anthropologist who completed an education in 'Participatory Action Research' in The Netherlands. Part of the education was organizing an action research project. She approached Dr. Linda Greenwall and conducted this (pilot) research project for her dental charity. The project was called: 'Healthy Teeth Challenge'. Alice selected four Dutch students and young professionals from different disciplines, backgrounds and universities (International Public Health, Oral Hygiene, Medical Anthropology and Nursing) to go with her to Cape Town. In Mfuleni township Alice and her team worked together with Mavis Phahlindlela and Dieketso Nobonke Mpelisi, the two most important DWT volunteers. During the research period of three months they

[1] Dental Wellness Trust, 2016, Projects – Dental Charity – Dental welness Trust, http://dentalwellnesstrust.org/about-us/ (19-07-2016)

[2] Dental Wellness Trust, 2016, Projects – Dental Charity – Dental welness Trust, http://dentalwellnesstrust.org/projects/livesmart/ (19-07-2016)

[3] Dental Wellness Trust, 2016, Projects – Dental Charity – Dental welness Trust, http://dentalwellnesstrust.org/projects/ (19-07-2016)

were the key informants, the bridge to the community, translators and co-researchers. Furthermore, Mavis and Dieketso selected a primary school with almost 2000 pupils to conduct the research at.

This research project was a 'Participatory Action Research' into oral health amongst schoolchildren from Mfuleni township age 0-12, to find out the different stakeholders in oral health, the root causes and the outcomes of poor oral health for these children and to effectively involve community members in building the solutions for this social issue that affects them so badly. An action plan was designed together with the stakeholders to tackle tooth decay amongst children. Part of the 'action plan' was that the team provided oral health education, handwashing and toothbrushing lessons to almost 2000 pupils at the school where the research was done. As a result, nowadays (after completing this research project) almost 10.000 children are involved in the DWT brushing program.

This PAR has contributed to the Sustainable Development Goals Nr. 3 Good Health and Well-being (ensure healthy lives and promote well-being for all at all ages) and Nr. 4 Quality Education (ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. [4]

[4] Unknown, 2017, UN Sustainable Development Goals, Sustainable Development Knowledge Platform, https://sustainabledevelopment.un.org/?menu=1300 (28-09-2017).

1 Introduction

1.1 Introduction

In South Africa there are few dentists in the townships. Dental health is found to be low in these areas, with a large amount of children experiencing toothache and consequently not going to school. In 2011 renowned London dentist Dr. Linda Greenwall therefore established Dental Wellness Trust (DWT), which fulfils her long-envisioned life goal to establish a dental charity to help those in need.[5] In South Africa she works together with Mavis Phahlindlela, an educare (crèche) owner. Mavis is the local coordinator.

DWT states that 80% of the children in South African townships suffer from tooth decay. The most common cause of school absenteeism, next to diarrhoea, is toothache. Two dentists and one oral hygienist serve the whole of Mfuleni township, which has a population from nearing 100.000 people. Many children in townships never had a personal toothbrush, most share theirs with their family.[6] DWT has set up different programs to provide oral health education to children, handwashing and toothbrushing programs, and a program to share information and disseminate good practice amongst dental health practitioners.[7] This 'Participatory Action Research' into oral health amongst schoolchildren from Mfuleni township age 0-12 for DWT was a pilot project, to discover the root causes and the outcomes of poor oral health for the community and more effectively involve community members in building the solutions for this social issue that affects them.

1.2 Research methodology, main question and sub-questions:

This study was conducted under supervision of Alice Grasveld. She followed the Action Research Academy of 7Senses and organising and supervising an action research was part of that education. 7Senses is a research company from The Netherlands that was founded by Madelon Eelderink. 7Senses believes that development cooperation can be more effective and that organisations can create more impact when using 'Participatory Action Research' (PAR) prior to implementing projects to realize sustainable impact. Through PAR one formulates a social issue from the perspective of different stakeholders, while letting them design, co-create and implement

[5] Dental Wellness Trust, 2016, Projects – Dental Charity – Dental Welness Trust, http://dentalwellnesstrust.org/about-us/ (19-07-2016)

[6] Dental Wellness Trust, 2016, Projects – Dental Charity – Dental Welness Trust, http://dentalwellnesstrust.org/projects/livesmart/ (19-07-2016)

[7] Dental Wellness Trust, 2016, Projects – Dental Charity – Dental Welness Trust, http://dentalwellnesstrust.org/projects/ (19-07-2016)

solutions together through a series of interviews, Focus Group Discussions (FDGs) and workshops. This is how they get a sense of ownership and find solutions that fit the local socio-cultural context.[8] According to Stringer:

'Action research works on the assumption, (….), that all stakeholders–those whose lives are affected by the problem under study–should be engaged in the processes of investigation. Stakeholders participate in a process of rigorous inquiry, acquiring information (collecting data) and reflecting on that information (analyzing) to transform their understanding about the nature of the problem under investigation (theorizing). This new set of understandings is then applied to plans for resolution of the problem (action),…' (2014: 15).

PAR is an alternative to traditional development cooperation, it is designed specifically to facilitate local solutions, to leave behind (western) preconceptions, and allow the community to generate their own process of improving their livelihoods.[9] PAR is a 'systematic investigation, with the collaboration of those affected by the issue being studied, for the purposes of education and taking action or effecting social change.' In this kind of research, the people in the community under study participate actively with the professional researcher throughout the research process from the initial design to the final presentation of results and discussion of their action implications. PAR thus contrasts sharply with the conventional model of pure research, in which members of communities are treated as passive subjects, with some of them participating only to the extent of authorizing the project, being its subjects, and receiving the results. PAR adds to academic and other professional research with research done by community members, so that research results both come from and go directly back to the people who need them most and can make the best use of them. PAR stands for 'involv[ing] researchers and participants working together to examine a problematic situation or action to change it for the better.' (Gree et al. 1995; Stringer 2014; Kindon, Pain & Kesby 2007).

PAR leads to 'meaningfull engagement'. Renowned South African judge and anti-Apartheid activist Albie Sachs talks about 'meaningful engagement', which promotes "The reciprocal duty of citizens to be active, participatory and responsible and to make their own individual and collective contributions towards the realisation of the benefits and entitlements they claim for themselves, not to speak of the

[8] Madelon Eelderink, 2015, 7Senses Research Academy – 7Senses, http://www.7sens.es/the-netherlands/action-research-academy/ (19-07-2016)

[9] 7Senses, 2017, Co-Create sustainable impact with 7 Senses, http://www.7sens.es (06-09-2017)

wellbeing of the community as a whole" (2001; 2009; 2015). He argues that the community is more likely to protect and preserve the service if members have been given a say in its design and implementation. Successful engagement requires good faith, inclusiveness and a commitment to transparency in sharing relevant information.[10]

After Alice Grasveld followed the Action Research Academy she flew to Cape Town with a multidisciplinary research team consisting of four Dutch students and young professionals (Medical Anthropology, Nursing, Dental Hygiene, and International Public Health) and worked together with two local researchers (Mavis & Dieketso, community-members and volunteers of Dental Wellness Trust) and facilitated a process that triggered self-inducted, bottom-up positive change in the community of Mfuleni. The goal was to find out what kind of solutions the team could co-create for this problem of tooth decay amongst children together with the inhabitants of Mfuleni.

Due to safety issues in the townships at night, the team was unable to live in the community and become a real part of it, but the team conducted participant observation of the children (and other stakeholders involved in oral health) in their natural habitat and their daily lives during the days.

There were three phases on location (Cape Town) in this research. Firstly the preparation phase in which the Dutch research team introduced itself to Dental Wellness Trust and to the local researchers Mavis and Dieketso, to team of the University of Western Cape (UWC) Community Dentistry Department, to the inhabitants of Mfuleni township (by going to a church service and telling the pastor and visitors about the research). Furthermore, a primary school of 1870 pupils was selected by Mavis and Dieketso (Itsitsa Primary School). Three workshops were given by Alice; i.e. a Teambuilding, a Research Design and an Interview workshop. Afterwards the team visited the school and surrounding community every day for participant observation during which informal conversations with a variety of stakeholders were held and based on that information a stakeholder analysis was made (see page 18).

Secondly there was the data collection phase, during which different school and house visits were made. At the main research location, Itsitsa Primary School, semi-structured Focus Group Discussions (FGDs) with the schoolchildren were conducted. Furthermore, other stakeholders (parents, teachers, entrepreneurs (i.e. sweet sellers), local dentists, local oral hygienist and UWC Community Dentistry Department staff, and witch

[10] Sandra Liebenberg, 2014, Mail & Guardian, Social audit raises issues around the right to sanitation – Opinion - M&G. http://mg.co.za/article/2014-10-22-social-audits-as-a-tool-to-realise-the-right-to-sanitation/ (15-12-2015)

doctors were interviewed using in-depth individual semi-structured interviews. These interviews and FGDs were audio-recorded and later transcribed and translated. Moreover, a creative method Photo Voice and a Dental method called dietary anamnesis were used to gather information about the living conditions and the diet of children.

The third phase in the research was the action plan and implementation phase, in which four semi-structured Focus Group Discussions (FGDs) were organised for the different stakeholder groups (the parents, teachers, entrepreneurs, the UWC Community Dentistry Department and the Dutch Consulate General). Prior to these FGDs the main themes of the research were decided upon and a 'problem tree' was designed (with root causes and outcomes, see page 15). The 'cutting and sorting' method was used to colour code the data and to find matching quotes for the main findings. Action research analysis methods were used for the analysis. This 'problem tree' was presented to the different stakeholders to give them insight into the problem (and to be verified with them). During these FGDs an 'Action Plan' was designed by the community members to tackle the problems surrounding poor oral health. One of the action points was that the research team had to go around the 41 classes to give oral health education (to raise awareness about oral hygiene and nutrition), and provide handwashing and toothbrushing lessons. Each schoolchild got a personal toothbrush with its name that is stored hygienically on a toothbrush board in the 'Health Corner' in each class (see picture 1, page 9). In this way the teeth can be brushed at school once a day. Before brushing the teeth, the children need to wash their hands properly. This was practiced several times with the children.

A participant (DWT volunteer) stated: *"To the children it is easier to learn if you are doing songs. Not just to sit with them and tell them how to brush their teeth and how to wash their hands, no sing with them, so they can learn easily! So I started to write these rhymes, such as Lunchbox Yam, all of these rhymes."*

Therefore, fun activities such as singing and dancing, practicing rhymes about healthy teeth and good food, and games and a major sports day were organised to make the children relax, let them learn and take away the fear of dentists. In the last week of the project a graffiti wall painting was designed by a street artist: a comic with instructions on how to wash the hands and brush the teeth. This comic is now on the walls of the schoolyard.

As shown in the Action Research design at page 10 & 11 the main research question of this research project was: *What kind of intervention, that takes into account the local*

circumstances, can we co-create for the children age 0-12 in Mfuleni township to improve oral health and to lower school absenteeism? There were four main sub-questions concerning 1. Barriers to Dental Care; 2. Cultural practices and oral hygiene behaviours; 3. Diet; and 4. Knowlegde Transfer about Oral Health, that were divided amongst the four Dutch students. Those questions were answered by the community and made the team discover the root causes and outcomes of poor oral health.

In Chapter 2, the main root causes and outcomes in the problem tree (themes that emerged from the data) will be discussed. In Chapter 3, the recommendations for DWT that follow from these findings and the overall conclusion will be presented.

Picture 1: A DWT Toothbrushing Board

1.3 Action Research Design

Problem statement: 80% of children in Mfuleni has tooth decay and toothache is one of the most common reasons for school absenteeism. The community has lack of finances for oral health materials (toothbrushes, toothpaste) and healthy diet. The community has lack of knowledge about oral health. The community has lack of support system to take care of their teeth/health.
Research objective (primary goals): Prevention programme for all the stakeholders. Help to solve oral health problems. Involve teachers to supervise brushing after school. Teach the children self-care & behavioural change & take responsibility. Improve awareness about oral health. Educate sweet sellers about negative effects of sweets on teeth. Appreciate teeth more (teachers, parents, children). Involve parents to supervise brushing after school. Educate about brushing and diet (teachers, parents, children). Improve and give recommendations for Dental Wellness Trust.
Overall objective (secondary goals): Decrease toothache & give children a better future through proper education (secure their position at the labour market). Improve quality of life & well-being of children. Sustainability of the project. Lower school absenteeism amongst children. Improve long-term life goals for children.
Main research question: What kind of intervention, that takes into account the local circumstances, can we co-create for the children age 0-12 in Mfuleni township to improve oral health and to lower school absenteeism?
Subquestions: **Barriers to dental care:** What are the barriers to search dental healthcare for people (children) in Mfuleni, according to the community members? **Cultural practices/oral hygiene behaviours:** What are the cultural beliefs and practices of people in Mfuleni township regarding

oral hygiene behaviours?

Diet:
What are the dietary habits and how can we use information about the diet to raise awareness?

Knowledge transfer:
How can Dental Wellness Trust transfer health knowledge in a systemic way that is more sustainable?

Research methods: Action Research Methodology

All: Participatory Observation

Feray:

Children: Creative method, home visits, (watch them brush their teeth).

Dentist, Health Community Center, DWT, teachers, parents: Interviews. **All stakeholders:** Focus group discussion.

Lynn:

Children: Dietary anamnesis, Photovoice (about diet), semi-structured interviews, disclosing test/plaque scores.

Parents: semi-structured interviews.

Sao:

Children <6: creative methods

Teachers, Health Community Center, Dentist, Parents, Children >6, DWT: semi-structured interviews.

Teachers, Parents, Children 6>: Focus group discussions.

Fleur:

All stakeholders: Focus group discussion.

Dentists, DWT, Sweet Sellers, children, parents, teachers: semi-structured interviews.

Stakeholders:

Dentists in Mfuleni (public/private);
Children;
Parents;
Sweet sellers;
Health Community Center;
Teachers;
Dental Wellness Trust;
UWC Community Dentistry Department.

Concepts:

Beautiful smile: comfortable, confidence, straight and white, teeth without decay, cleanliness. **Access to a dentist:** AAAA (Accessibility, Availability, Affordability, Acceptibility), note: lack of knowledge, dentist only visited when you have pain and associated with extractions.

School absenteeism: Children not going to school due to toothache. Toothache happens frequently, 80% of children has big cavities.

Toothbrushing and supervising: working parents don't have the time to supervise toothbrushing.

Oral health: poor/proper = definition WHO.

Oral hygiene behaviours: related to finance and education.

Oral health education: department of health, no follow up.

Diet: health/unhealthy related to finance and time, awareness and health problems.

Research Design STEPS:

1. Find school and get permission
2. Ethical approval UWC and informed consent UWC.
3. Introduction to the community (church).
4. Interview guide and finalize focus research.
5. Meet children and teachers.
6. Research design and stakeholder analysis.
7. Apply different (creative) methods: participatory observation, interviews, FGD's, photovoice, dietary anamnesis.
8. Planning throughout the research.
9. Attend parent meetings.
10. Visit secondary stakeholders.
11. Transcribe interviews and FGD's.
12. Analyse data.

13. Provide community workshops 5-10: present data, discuss solutions.
14. Action plan (written) and implementation.
15. Set up Oral Health Education, handwashing and toothbrushing program at the school
16. Give recommendations to DWT
17. Write a Research Report

TIME FRAME ON LOCATION: 9 weeks.

2 Results

2.1 Introduction

South Africa is classified as a middle income country. South Africa is an emerging market, due to an abundant supply of natural resources. The financial-, legal-, energy- and transport sectors are well developed in the richer regions of South Africa (Wyk & Wyk 2004 in Rudolphus 2017). And yet, South Africa has still a relatively high number of people living in poverty. The country has a very unequal income distribution pattern and is ranked in the top ten countries in the world with highest income inequalities. Poverty is largely experienced by the township inhabitants. First world and third world circumstances co-exist in South Africa (Rudolphus 2017). Mfuleni is classified as a township and therefore a resource-poor and poverty-stricken area.

2.2 Living conditions in Mfuleni Township

Mfuleni is a relatively new township about 40 kilometres from Cape Town, South Africa. It covers approximately 400 hectares (Njomo 2006: 16-29) and got its name from the isiXhosa word 'Mfuleni' that means 'by the river'. Mfuleni is a suburb of Blue Downs area and is close to Khayelitsha township and Delft township. It is estimated that nowadays around 100,000 people live in this township, although this can never be stated with 100% certainty because there is also a large number of informal and thus illegal inhabitants.

The township was created as a result of the Group Areas Act of 1950 and started with 114 block hostels that housed approximately 2218 black male workers. Family members were not allowed to live in the area at that time. In 1976 the first residential houses were constructed for families and the hostels were changed into dwellings to accommodate families in 1997, according to Njomo (ibid.: 16-29). Most community members were forced to migrate to Mfuleni from the late 1990s due to flooding, fires and taxi wars in different townships, such as Philippi, Old Crossroads, Nyanga and Khayelitsha. Hence, Mfuleni is a mixed community. It is part of the Cape Flats, it consists of dunes covered by bush (ibid.: 16-29). In 2006 20% of the population was above 35 years old, 70% of the population was between 14-35 years old, and children between 0-14 years old made up for 10% of the population (ibid.: 16-29).

It is a predominantly Black (95,9%) township, although there are also some coloured[11] members of the

[11] The coloured people from South Africa are from mixed ancestral heritage: they are a heterogeneous ethnic group descending from (marriages between) the Khoi San, Asian, European, Zulu and Xhosa people.

community.12 The community of Mfuleni is predominantly Xhosa, in 2006 more than 86% of the population spoke isiXhosa. Furthermore, about 2% understood English. Finally there was a small community of Afrikaans speakers (mostly coulored people) around 8% and there was also 4% of the community that spoke other South African and foreign languages (Njomo 2006: 16-29).

Unemployment, HIV/AIDS and crime are some of the most pressing problems in this poverty-stricken area.13 When rates of drug and alcohol abuse are high, and are combined with extreme urban poverty and unemployment, this results in a high crime rate, according to Thompson et al. (2012: 3). This is also the case in Mfuleni. Most crimes occur at night. The unemployment rate is very high at about 57%. Until 2005 Mfuleni was relatively safe and was without a Police Station, but as the population swelled, so did the levels of crime (e.g. murder, rape, assault, arson, theft and burglary). In January 2005 the government of the RSA opened a Police Station (Njomo 2006: 16-29).

Living conditions are harsh, and inhabitants are exposed to forms of 'structural violence' on a daily basis. Structural violence, according to Johan Galtung (1969), is a form of violence that is indirect and is built into the social structure of the society. This form of violence implies unequal power and consequently unequal chances and an unequal distribution of resources. Mfuleni is indeed a resource-poor setting. In 2006 the general income per household was less than R1500,- per month (Njomo 2006: 16-29). This is barely enough to pay for the bills and to pay school fees for the children.

Although most of this township is formalised by the City of Cape Town (CoCT), and thus it has formal houses with water taps, sanitation, electricity, and tarred roads, there are still some shacks of corrugated iron or wood on the edges of Mfuleni (informal houses), which lack the basic necessities such as water, electricity and sanitation.

Therefore in some parts of Mfuleni, there is poor access to services such as clean water, food and sanitation (Dental Wellness Trust, 2016). Moreover, there was a pressing water shortage in Mfuleni due to the huge drought in South Africa of the past couple of months (February, March, April and May 2017). This situation is still ongoing, because a record-low rainfall season has seen little improvement in the water crisis. On July 31, dam levels stood collectively at 27,9% – effectively meaning that the usable level was at 17.9%.[14] The other

[12] Unknown, Mfuleni - Wikipedia, https://en.wikipedia.org/wiki/Mfuleni (18-06-17)

[13] Unknown, Mfuleni - Wikipedia, https://en.wikipedia.org/wiki/Mfuleni (18-06-17)

[14] Williams, J., Cape Town drought crisis and dam levels – how are we faring? CapeTown ETC,

10% is 'unusable' due to sediment in the lower levels of the dams. A local, independently run website called 'How many days of water does Cape Town have left' was started to track the last days of the water supply.[15] The situation was and still is worrisome and mostly affecting the townships. Several informal conversations were overheard about the poor drinking water quality in Mfuleni and surrounding townships during this drought. There were rumours that the City of Cape Town put chemicals in the water to improve the quality. Some children from the townships feel ill because of the water around that period and had to go to the hospital.

Excessive waste is another serious challenge in Mfuleni. Despite measures taken by the CoCT to dispose of waste, some areas in Mfuleni are still very dirty. Garbage that is left to lie around attracts flies and animals such as rats and street dogs. The street dogs also leave excreta at the streets, which forms a health hazard (Njomo 2006: 16-29).

There are few public facilities for the residents of Mfuleni. Until the arrival of democracy there were no schools in Mfuleni, states Njomo (ibid.: 16-28). However, because of recent developments there is nowadays a large number of crèches (called 'educares'), a couple of Primary Schools, and a few High Schools in Mfuleni. This is a positive development, since education is known to be the only way out of the 'poverty trap'. The 'poverty trap' is a situation wherein a disadvantaged group of people is stuck in a situation of poverty for generations, constrained by its history and lack of human capital (Young-Chul and Loury 2014: 535).

The main economic activity in Mfuleni is trading. There are lots of small business such as barber shops, hair dressing saloons, cell phone repairs, cardboard stores, fridge repairs, telephone shops, clothes stores, car repairs and fruit-and vegetable stands located next to the road (sometimes in containers). The commercial centre harbours a shopping centre with a supermarket. There is a taxi rank close to the shops (Njomo 2006: 16-29). Furthermore, there is a community hall where lots of activities and meetings take place.

Mfuleni has no big hospital, although recently a new, up-to-date Health Clinic was opened, providing basic medical and dental care. It has replaced the old Health Clinic that had been operating since 1976. This clinic was divided into a children section and an adult section. This clinic has improved the access to health care, although is not enough to meet the needs of all. The most common illnesses that were treated in 2006

http://www.capetownetc.com/news/cape-town-drought-crisis-dam-levels/ (01-08-17)

[15] Williams, J., Cape Town has 61 days of water left. CapeTown ETC, http://www.capetownetc.com/news/cape-town-61-days-water-left/ (07-08-17)

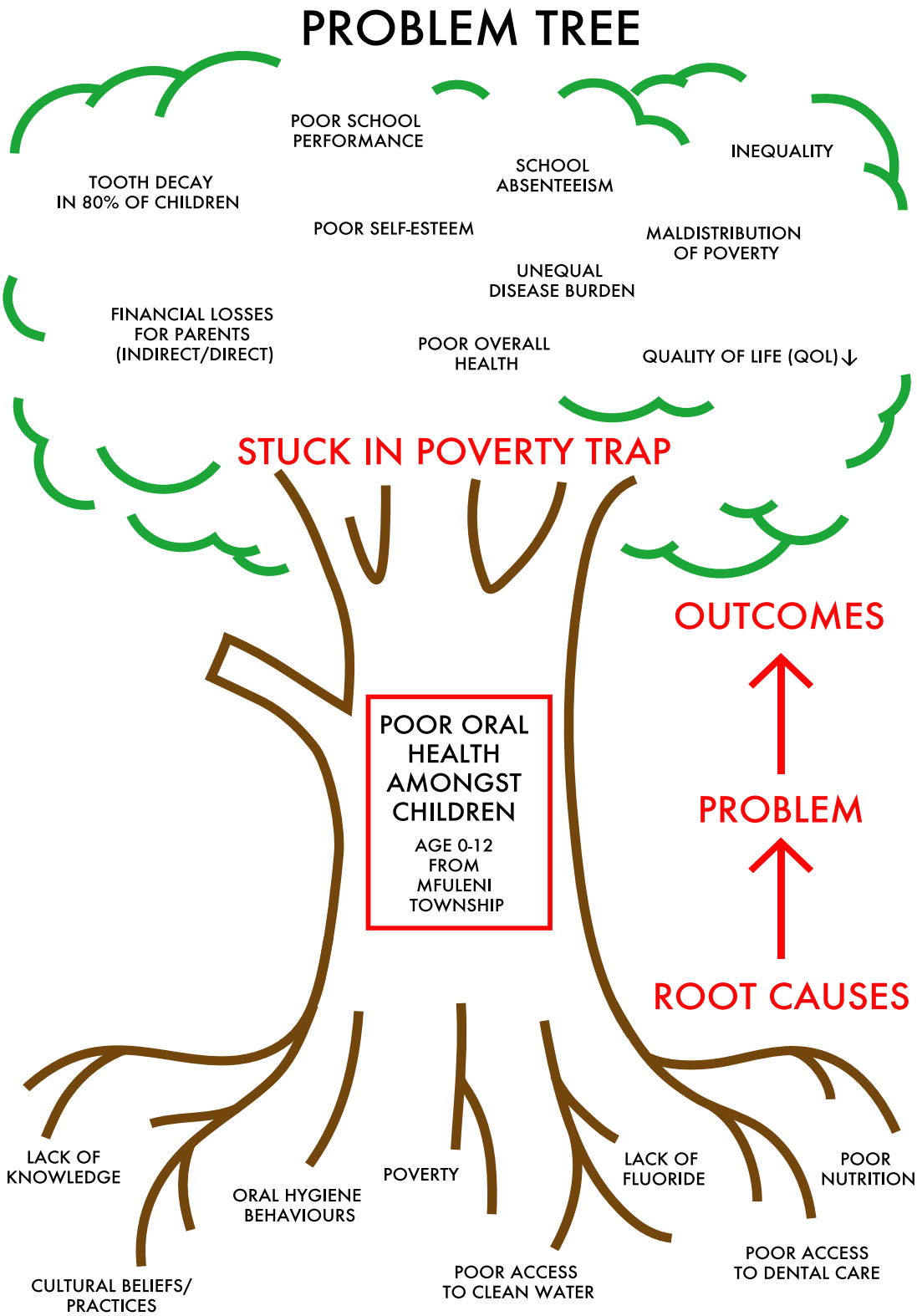
were HIV/AIDS, Tuberculosis (TB), Pap smears for females, Sexually Transmitted Diseases (STD's), immunization for children, curative service for children, mother to child transmission, underweight and nutrition, according to Njomo (ibid.: 16-29).

The health care system in South Africa is divided in a public and a private sector. 16% of the population has third party insurance, which covers care in the private sector. The remaining 84% use health services of the public sector, making them dependent on the state (WHO 2017b in Rudolphus 2017). The Mfuleni residents are mostly dependent on public health care, especially the unemployed community members.

The new Health Clinic offers public health care and public dental care. However, just as in many other areas in South- Africa, access to oral health services in townships is very limited. Expensive oral health services are only offered at regional hospitals and also few preventive measurements are taken (Petersen 2005 in Rudolphus 2017). Due to the large numbers of residents visiting the dental department at this public clinic, the waiting hours are long. The main dental treatments provided are extractions and periodontal cleaning for pain relief (Emergency Dentistry).

All in all, the living conditions in Mfuleni township are poor. Inhabitants are either unemployed or earn very little. Mfuleni is a resource-poor and poverty-stricken area. People are exposed to 'structural violence' and income inequality on a daily basis. In some parts of Mfuleni there is poor access to water and sanitation. Finally, access to healthcare and dental care is also poor, because there are only a few facilities. However, the area has been developing in recent years and there is better access to education nowadays.

2.3 Themes that emerged from the research: Root causes & outcomes



2.3.1 Root causes of poor Oral Health

What is oral health? According to the WHO the definition of oral health is:

> *"Oral health is essential to general health and quality of life. It is a state of being free from mouth and facial pain, oral and throat cancer, oral infection and sores, periodontal (gum) disease, tooth decay, tooth loss, and other diseases and disorders that limit an individual's capacity in biting, chewing, smiling, speaking, and psychosocial wellbeing" (WHO, 2013).*

Oral health is linked to general health and quality of life according to the World Health Assembly. The mouth and the teeth are essential in the intake of nutrition and are the starting point of the immune system of the body (WHO, 2017b). According to the WHO, the most familiar oral diseases are dental caries, periodontal disease, oral infections of HIV and AIDS, oral cancers, orofacial trauma and hereditary oral diseases (Petersen et al., 2005; WHO 2017b).

Despite great improvements over the past few years, the global burden of oral health among children is still a major public health problem (Petersen et al. 2005; Petersen, 2003). Poor oral health can cause oral conditions such as dental caries, periodontal disease, tooth loss and even different types of cancers (Petersen et al., 2005). Oral health is integral to the general well being of people and the quality of life. A healthy mouth allows an individual to talk, eat and socialize without experiencing pain, discomfort or embarrassment (Petersen et al., 2005). Oral diseases are qualified as a global burden, due to its high prevalence and incidence in all regions throughout the world. However, the greatest burden of oral diseases is particularly seen in poor populations, where people are socially marginalized (Petersen, 2003).

This is also the case in South-Africa, where oral health continues to be a public health problem (Naidoo, Chikte & Sheiham 2001, in Rudolphus 2017). The South African prevalence of oral diseases differs a lot per geographical regions due to differences in availability and accessibility of dental services (WHO, 2017d). Oral health is found to be particularly low in many South-African townships, such as Mfuleni township. There is an alarming number of children are suffering from severe pain due to poor oral health in the Mfuleni township according to Dental Wellness Trust (2016). The main root causes that emerged from the research are the following:

Lack of Knowledge

South Africa (and especially its townships) has one of the highest rates of inequality and child violence in the world, therefore concerns around ethnicity, race, class, gender, and particularly socio-economic status (SES), are crucial (Adams, Savahl & Fattore, 2017). This inequality has its roots in the Apartheid. During the

Apartheid Black inhabitants of South Africa were not allowed to study. The aftermath of this fact is still noticeable today, as South Africa has still a relatively high number of people with a low SES living in poverty in the townships. The country is characterized by an unequal income distribution pattern and a high level of economic inequality. Poverty is largely experienced by its Black inhabitants. Mfuleni is a predominantly black area (Rudolphus 2017). The educational level of the parents at Itsitsa Primary School is low. However, because the teachers were fortunate enough to get a better education, there is a knowledge and awareness gap between the parents and the teachers.

Knowledge teachers

In total six teachers and four individuals (including the Principal of Itsitsa Primary School, who is an important member of the community) were interviewed. Our findings on knowledge and awareness were that the teachers have more knowledge of oral health and the effect of nutrition on teeth than the parents, because the teachers are better educated. Their sources of information were their own parents, their study, the private dentist/clinic, books, God, TV, other media, and the NES or PEP program. They tend to see more indirect negative outcomes from dental problems compared to the parents, they stated that they saw children being bullied at school because of bad teeth. They also believed that poor oral health can affect a child's well-being, self-esteem, confidence, image, ability to make friends, and ability to concentrate.

Besides brushing teeth twice a day, which was mentioned by all teachers, there was one teacher who mentioned flossing and rinsing the mouth after eating. Another teacher mentioned that she goes to the doctor (dentist) regularly to clean her teeth.

Furthermore, several teachers mentioned that the parents do not have enough awareness of proper oral hygiene methods, because of their lack of education. Also socio-economic problems were given as reasons that may prevent people from brushing their teeth, such as lack of money to buy toothbrushes and/or alcohol abuse. A respondent (the Principal) mentioned*:*

> *"The background of parents is a barrier on its own. If I grew up and I'm not enlightened enough. Using the ash [to clean the teeth], I can encourage the kids to use ash here. There's no ash here, this is Western Cape, this is Cape Town. Most of the time, as parents we tend to focus more on where we come from and how we were brought up. They want our kids, you know, to be brought up the same way."*

The teachers also mentioned the bad effect of a sugary diet on oral health. They stated that sweets or sugar, acid drinks, junk food, snacks, hot food, biscuits, chips and chocolate are bad

for the teeth and stated that a balanced diet with fruits, vegetables, water and milk is good for the teeth. They believe that sugar in food can cause worms, a rash, and even death (Lai 2017). They are aware of the problems with sweet sellers, they know that sweets cause a lot of harm to the teeth. However, as the sweet sellers are often unemployed community members (mothers that try to earn enough to send their children to school) and because Itsitsa is a public school (and the school yard therefore is community property), they cannot send them away. They do not know how to tackle this problem.

Some of them do not know the difference between public and private dentist. Through their line of work they are insured privately, therefore they can visit the private dentist. They shared with us that uninsured community members in general do not go to the dentist unless they have severe dental pain. The reasons they mentioned were 'laziness', lack of knowledge, money, time or fear. There seems to be an 'Extraction-culture' in Mfuleni, which entails that people only visit a dentist when they are in severe pain. Then, because the caries is so severe and has caused an endodontic problem or an abcess, the only option is extraction, as other procedures are too expensive. There is almost no preventive dentistry performed in Mfuleni.

In general, the teachers are trying to educate their own children and/or the schoolchildren about oral health. When we asked them if there were previous oral health education programs at Itsitsa Primary, it was discovered that not all teachers knew if an oral health programs had taken place at the school in the past.

They recommended involving the parents in the oral health education, inviting them to school. Showing them how to brush teeth, so they can continue where the teachers left off. They also stated that adults (teachers/parents) are those responsible to teach the children correctly. Children need guidance and supervision. They mentioned that people from Mfuleni need more information and knowledge on what is happening when you go and see the dentist (advantages/disadvantages). A respondent (teacher) stated:

> *"I think we need more information on what is happening when you are going to see a dentist. What are the advantages. What are the disadvantages. So that uh, we don't have the uh, the wrong perception of the dentist, because we tend to listen to the negative side of the things without even considering the, the, problem and the causes and uh, the whole thing. Stuff like that. I think we need more knowledge."*

Furthermore they want the community to be informed on how to cook healthy food, to make sure that parents teach their children what they allowed buy at school (healthy snacks). Finally they said that DWT should involve

community leaders in promoting oral health knowledge and behaviour, to 'spread the gospel' throughout the community.

Knowledge parents

In all twelve parents were interviewed. In general, the parents have very little knowledge and incorrect ideas on oral health and the effect of nutrition on teeth, because these parents are less educated than the teachers. Most acknowledge the importance of taking care of your teeth, but if one looks at the state of (the children's) teeth they may have been giving socially desirable answers. Most stated that they themselves brush twice a day. In some cases they use additional mouthwash or a cloth as an alternative when a toothbrush is not available. The reasons for brushing were keeping their teeth white, preventing tooth decay, bad breath and dirty, discoloured teeth. Furthermore, most stated that sharing a toothbrush is not healty, referring to 'cross-infection' with blood and diseases such as HIV.

Some try to teach their children about oral health, but they admit there is not always time to guide and supervise them with brushing. It is not a subject that is generally discussed at home, and they do not take the effort to teach their children. As people are trying to 'survive', teeth are not a priority unless they cause severe pain or discomfort. A participant (parent) said:

> *"I teach him (son) a bit how to brush. I do not brush with him most times. I am not always with him. I am working or maybe he is playing. I am working 5 days a week. Home in the weekend. That is hard."*

In general the parents seem to know that sugar is bad for the general health and can cause different diseases, but they are not aware that sugar is bad for the teeth. They stated they would like to balance the diet, however, they cannot afford to buy healthy food because it is more expensive.

Just as the teachers, they mentioned that they believe that sweets (or sugar) can cause worms, jaundice, can affect the eyes, can cause diabetes, depression and other diseases. Only one parent mentioned that sweets, chips and germs can affect the teeth. Another parent did relate tooth decay with eating too many sweets. She said:

> *"Sweets are not a problem. But you see the problem is to eat it a lot. Sweets are not a problem really, they can eat sweets but... In my opinion don't do it too much."*

Most have visited a dentist in the past and know the difference between private and public dentistry. Whether they visit a private or public dentist depends on being insured and on their financial background, they weigh their options. All parents relate a visit to a dentist to extractions, and are not aware of other services. They only visit a dentist when they are in severe pain or discomfort. Most try to manage the

pain with painkillers (Panadol or Grandpa powder) first, because going to the dentist means that they have to take a day off work, which means loss of income. As mentioned above, there seems to be an 'Extraction-culture' and there is hardly preventive dentistry performed in Mfuleni. A respondent (parent) stated:

> *'Extraction is not good at all. Which is, for now, the black communities' only time that they visit the dentist.'*

There was one parent who is also a *Sangoma* (witchdoctor) and she mentioned that she does not visit the dentist at all. Her problem was 'shaking teeth', which she tried to solve herself. She stated:

> *"Because in my tradition, I can't go to the dentist, neh. Because I'm a Sangoma, so my teeth...I mustn't go there pull it out, it must pull it (fall) out itself."*

Not all parents were aware of oral health programs in school. Some had received Informed Consent forms, but never heard back from their children or the teachers whether the program had taken place. Two parents could confirm that some doctors or nurses had visited the school, one knew it was about discussing health topics, the other parent did not know what the purpose of the visit was. Their sources of information about oral health are 'Colgate people' or advertisements (media), their own parents, and in a few cases the dentist/clinic (although most mentioned that they did not receive oral health education at the clinic). Another participant (parent) mentioned:

> *"Yes. At school I come for… Colgate. They come always with Colgate."*

Concluding, in general people only go to dentist when they are in severe pain, because they are not aware of the possibilities of preventive dentistry. DWT should inform them about the possibility of free check-ups, cleaning and fillings. Parents seemed eager to learn more. Six out of twelve parents mentioned the importance of teaching children about oral health and stated that they would like to learn more about oral health themselves from Dental Wellness Trust (Lai 2017). One parent advised to expand the dental facilities in the community, and that people pay a small fee. All respondents mentioned long queues at the public dentist and oral hygienist. They have to take day off work and at times they must come back the following day, because they could not be helped due to the long queue.

Cultural Beliefs

Most people Western Cape, South Africa, are Christian, 87% to be precise. Muslims come second with approximately 5,3% and Ancestral, tribal, animist and other traditional African religions come third with 2,8%. Finally, religions such as Hunduism,

Judaism, make up for the other 4,9%.[16] Statistics on religion in Mfuleni are not defined. However, due to the fact that 87% of South Africa's population is Christian, it is most likely that most Mfuleni inhabitants are Christian too. Indeed there is a big number of different churches in this township. It was discovered that people from Mfuleni township also worship their ancestors. This belief often co-exists with Christianity, and some churches combine both beliefs (i.e. African Independent Churches, Zionist churches).

It was discovered that people from Mfuleni believe that ancestors bring across important messages through their bodies and teeth. People believe that when they have 'shaking teeth' (a condition that in scientific Dentistry is called 'Periodontitis') it is a message from the ancestors. A participant (parent) said:

> *'Yes, I know about the Sangoma. They (people in Mfuleni) go there for shaking teeth. After the rituals, the teeth are strong again…I would go there too…But you cannot go when you have rotten teeth, only for shaking teeth.'*

Then they usually visit a *Sangoma*, who are diviner-healers and who achieve their diagnosis and remedies through communications with ancestral spirits (Wreford 2008b in Wreford 2009). A participant (Sagoma) stated:

> *'Yes, the ancestors can send a variety of messages in different ways, at times in dreams using different symbols like running water, with people dressed in white for example. And they can send you a message via teeth if there is a ritual that needs to be done, and by burning incense and using snuff to get clarity from the ancestors as to what the message (problems with teeth) truly means.'*

The Sangoma we interviewed tells people to perform certain rituals to satisfy their ancestors. People believe only this will solve their 'shaking teeth'. They make a clear distinction between 'rotten teeth' (tooth decay) and 'shaking teeth' (Periodontitis). For 'rotten teeth' one goes to the dentist to extract, for 'shaking teeth' one has to visit the Sangoma, otherwise the problems will become more severe. According to a participant (Sangoma):

> *'Teeth that have ancestral meaning symbolism never decay. If a tooth is rotten (decaying) it must be extracted. If the teeth shake then we can use herbal remedies to strengthen them like burn incense and speak to the ancestors…No, because even if you take the 'shaking teeth' out, you still will not have solved the problem and it will persist and cause you swelling in the gums and all over your face.'*

Furthermore there is another traditional belief that when children shed their milk teeth, they have to throw them on a rondavel roof with a straw hat and ask the ancestors to

[16] Zijl, W., Van, South African statistics on religion – the numbers – SA Secular Society. http://secularsociety.co.za/south-african-statistics-on-religion-the-numbers/ (27-09-17).

replace them with strong teeth. Only then will they get strong permament teeth. This shows that people from Mfuleni township make use of both traditional healing practices and scientific medicine (Wreford 2009).

Culture can be defined as 'learned behaviour which has been socially acquired', Nuture versus Nature. In other words: 'it is the shared and organized body of customs, skills, ideas, and values, transmitted socially from one generation to other' (Chandra et al. 2009 in Coban 2017). Culture 'lays down norms of behaviour and provides mechanisms which secure for an individual, his/her personal, and his/her social survival', according to Chandra et al. (2009 in Coban 2017).

Behaviours and beliefs can be shaped by one's culture, and behaviour change can also be influenced by culture (Ting-Toomey, 2005; Witte & Morrison, 1995). Oral hygiene behaviours, therefore, can be influenced by culture. It is important to consider culture as an influence on behaviour, because people may show a certain behaviour only because it is culturally accepted behaviour (Chapman, 2013). Culture, therefore, influences choices people make about their (oral) health.

Oral Hygiene behaviours

Chapman makes a distinction between recommended oral health practices and non-recommended oral health practices (2013). The recommended practices are inspired on western behaviours, while the non-recommended practices are known to be popular in many African countries (Chapman 2013 in Coban 2017). She stated that despite the fact that these behaviours are non-recommended, they are not necessarily bad for one's oral health.

All the respondents indicated that in the ideal situation they would clean their teeth with a toothbrush, toothpaste, and water. All of them answered that they know that they have to clean their teeth twice a day. However, stakeholders have found themselves in situations in which they did not have access to a toothbrush and toothpaste (Coban 2017). Additionally other (non-recommended) methods, also common in the old days, are used. Almost all respondents mentioned to use a piece of cloth or their face towel. A respondent (parent) mentioned:

> *'What I do is use my face towel. To clean my teeth.'*

Furthermore people stated to take mint candy against bad breath. Also crushed bricks and the fingers, a bar of soap, and charcoal (ash) were mentioned as alternative methods to clean the teeth. Another participant (parent) mentioned:

> *'We would use ashes of wood and put it on our teeth with our fingers.'*

A Sangoma stated that in the olden days, when toothbrushing was not the norm, people would use chewing sticks to clean their teeth:

> *'At home in Limpopo, there's a tree that was used called mulala, you used the roots as bristles and chewed the roots and the teeth stayed clean and strong. And it becomes black 'here' and more beautiful.'*

Different stakeholders (i.e. teachers and parents) mentioned to use Grandpa powder or Panadol in case of emergency (toothache). A dentist also confirmed this:

> *'Most people use Grandpa powder (when people have toothache). They get this over the counter.'*

Finally, applying toothpaste on the tooth that hurts is believed to relieve pain. When none of these measures help and the toothache is really severe, people ultmately visit the dentist for extraction.

This shows that although a toothbrush and toothpaste are believed to be the ideal (recommended) method to clean the teeth, people often find themselves in situations in which this is not feasible so turn to other (non-recommended) methods.

Poverty

As mentioned above, Mfuleni is a poverty-stricken area. Poverty is intertwined with several other issues. Because the inhabitants are poor, it makes it harder to buy material to maintain proper oral health. Unemployment, HIV/AIDS and crime are some of the most pressing problems in this poverty-stricken area.[17] It is known that there is a correlation between HIV/AIDS and orofacial diseases.

'HIV related orofacial lesions are common indicators of HIV infection. They are included in the WHO presumptive clinical criteria for HIV infection diagnosis, because of their typical clinical appearance. The leasions maybe painful and at times persist for long periods, leading to (prolonged) compromised food intake and exacerbation of the ill-health of patients.' (Koyio et al. 2014: 1066).

This makes it harder to maintain proper oral health.

The unemployment rate is very high, at about 57%. In 2006 the general income per household was less than R1500,- per month (Njomo 2006: 16-29). This is hardly enough to pay the household bills, and this is certainly not enough to buy healthy food and such things as toothbrushes and toothpaste.

Furthermore, living conditions in Mfuleni are harsh, and inhabitants are exposed to forms of 'structural violence' on a daily basis. Structural violence, according to Johan Galtung

[17] Unknown, Mfuleni - Wikipedia, https://en.wikipedia.org/wiki/Mfuleni (18-06-17)

(1969), is a form of violence that is indirect and is built into the social structure of society. This form of violence implies unequal power and consequently unequal chances and an unequal distribution of resources. Mfuleni is a resource-poor and a poverty-stricken setting. It was mentioned by one of the research participants that poverty is 'cancerous', its overall presence in the community is obvious. It was observed that these poor living conditions influence oral health. People live in overcrowded houses. Although most of this township is formalised by the City of Cape Town, there are still some shacks of corrugated iron or wood at the edges. In the various houses that were visited (formal houses and shacks), there were no real bathrooms; consequently there is no proper place to brush teeth. People have to brush in the street/in the yard, which is not very hygienic. The water crisis and poor water quality make it even harder to brush teeth. Finally, there is not always electricity (as the costs are too high for some families), which complicates brushing in the evening even more.

Poor access to Clean Water

As mentioned before, there is poor access to services such as clean water in Mfuleni, especially when there is a huge drought such as this year (February, March, April and May 2017). This situation is still ongoing. In August the dam levels were hovering around 27%, however 10% is useless due to sediment in the lower levels of the dams.[18] As off 26 September, the latest collective dam levels were 37.4%, a reason for concern.[19] The situation is mostly affecting the townships. Some informal conversations were overheard about the poor water quality in Mfuleni and surrounding townships during this drought. There were rumours that the City of Cape Town put chemicals in the water to improve the quality. We heard that some local children fell ill because of the water during the research period and had to go to the hospital. This makes toothbrushing extra challenging.

Lack of Fluoride

It is well known there is a relationship between healthy (decay free) teeth and a daily intake of fluoride.

'Fuoride is delivered to the teeth systemically or topically to aid in the prevention of dental caries…There is no question about the importance of fluoride for the prevention of dental caries as it is the first line of defense,

[18] Williams, J., Cape Town has 61 days of water left. CapeTown ETC, http://www.capetownetc.com/news/cape-town-61-days-water-left/ (07-08-17)

[19] Williams, J., The latest Cape Town dam levels - 26 September 2017 – CapeTown ETC, http://www.capetownetc.com/water-crisis/cape-town-dam-levels-26-september/ (26-09-17)

along with education, for preventing the onset of caries…Topical fluoride is from sources such as community water, precessed foods, beverages, toothpastes, mouthrinses, gels, foams and varnishes.' (Clifton 2014: 95-96).

In recent years there has been a debate and reevaluation about community water fluoridation as it can cause a mild fluorosis (ibid.: 96). The UWC Community Dentistry Department stated that there is no fluoride added to the community drinking water in the Western Cape, which causes a problem for the children in townships, because they are not brushing their teeth on a daily basis and when they do, toothpaste is often too expensive and consequently not used. Therefore, children do not get the right daily dosis of fluoride to prevent cavities. DWT and the UWC Community Dentistry Department are currently conducting a research on the effectiveness of preventative fissure sealents and Fluoride-varnish research in children from Mfuleni township.

Poor Access to dental care

South African policies distinguish between primary oral healthcare (POHC) and secondary oral healthcare (SOHC) and tertiary oral health care (TOHC) (Department of Health 2015 in Coban 2017). POHC consists of oral health education, oral health instructions, preventive programs at schools and other institutes, screenings at schools, dental emergency services to relief pain and sepsis, restoration of teeth, and diagnosis of oral diseases. SOHC consists of care, which is provided to patients who are referred from the POHC level. TOHC is for patients referred to from SOHC, consisting of highly specialised services in hospitals (ibid.).

The following organised public dental services are free of charge in South Africa: screening of children at (pre-) schools, education of teachers, schoolchildren, and pre-school children, preventive programs (pre-) at schools, services to state-dependent (pre-) schoolchildren in clinics and other facilities, services to state-dependent in-patients in state institutions and hospitals, and oral health education services (Department of Health, 2015 in Coban 2017).

The health care system in South Africa is divided in a public and a private sector. Whether people use public or private care is dependent on whether they are employed and have an income. Most people in Mfuleni township depend on public health care. More than 80% of inhabitants of South Africa is dependent on public health care, although only 30% of doctors work in public health care. This means that this sector is seriously understaffed (WHO, 2017b).

Throughout the interviews it was discovered that the three main players in the field of Dentistry in and around Mfuleni township are the

private dentist, the public dentist and several facilities which are part of the UWC Community Dentistry Department. In Mfuleni alone (approximately 100.000 inhabitants) there is only one private dentist and one public dentist. This means that the ratio of dentists:patients is thus 1:50.000. The public dentist is free, but can only help 25 patients a day, which often results in long waiting lists. For the private dentist people have to pay a fee, depending on the service. The UWC dental clinics charge a fee based on a sliding scale.

There are **different barriers for dental care that fall in the following categories**: **availabity, accessability, affordability and acceptability**: First of all, the **waiting list** seems one of the worst factors influencing the **availability** of dental services in Mfuleni. For both the public and the private dentist no appointment is needed. At the public dentist people who come first, are served first. Since the public dentist is free of charge, many inhabitants of Mfuleni depend on this single public dentist. He only has a limited capacity in one day, he can only help around 25 patients a day during his service hours from 8.00 until 17.00 (Rudolpus 2017). This means that dental services in Mfuleni are seriously **understaffed**. A participant (teacher) stated:

'I think it is the demand. There are a lot of people that need to attend the dentist. And when you do not have a money you can only go to the public dentist. Whereas, the private dentist is only for the ones who can afford it. These are not so many. Just a few. So the community dentist is less over utilized.'

Poor availability also creates an **accessibility** barrier. To get the much-needed service from the public dentist, inhabitants of Mfuleni need to wake up very early (4 or 5 am), to get there at 7 am to be helped at 8 am. People line up in front of the facility to get dental treatment. At this time of day there is no public transport, which forces people to go on foot. Several mothers stated that this is very dangerous, because there is a lot **criminality in the townships at night** and people might get robbed or raped. A visit to the dentist therefore presents **safety issues.** For the private dentist there seems to be no waiting list. People can just walk in without an appointment for the private dentist. However, most cannot afford the private dentist due to the requested fees (Rudolphus 2017).

Furthermore, all stakeholders agreed that there is **no integration between the service hours** of all three dental players **and the working hours** of parents. The public dentist has a weekly schedule, on which Monday, Wednesday and Friday only extractions are being performed (Rudolphus 2017). The other two days the dentist provides several other treatments, such as fissure sealants. Especially younger children are depending on their

parents to take them to the dentist. Parents need to take the day off to take their child to the dentist and this results in loss of income for a day. According to a respondent (parent):

'Service hours is an actual problem. Because I wouldn't miss work for visiting the dentist.'

Both the public and private dentist are centrally located in Mfuleni. They are located near the shopping area, where all the people come to do their shopping. These places are relatively easy to reach during the day by most inhabitants as it is located in the middle of the township. Most people stated that they went on foot to the dentist. As it was close to their house or because public transport was not yet available. When they live far away, people rely foremost on **public transport** such as taxi buses, because the majority of the people do not have a privately owned car. A partipant (teacher) stated:

'It is about a 20-25-minute walk from my home. It is for almost everyone reachable.'

All stakeholders who ever visited the private dentist stated that you can walk in all day without an appointment, and most of the time the private dentist could see them the same day. None of the stakeholders stated that they had to line up early in front of the dentist to get needed services. The private dentist confirmed this.

As stated above, when people live far away, they depend foremost on taxi buses (**public transport**). Taking a taxi bus to the township centre is approximately five Rand (R5). Accessibility for people that have to depend on public transport is sometimes low due to **unexpected events**. For example, during the research a so-called **'taxi war'** occurred. For days all public transport was shut down, because there was a new taxi player in the townships who offered rides for a lower price. This caused an enormous fight between the two taxi companies, in which a lot of people were gunned down and even killed. All public transport in the townships was shut down for over a week. At times like these, not only accessibility to health care facilities is hard but also commuting to and from work is impossible for a lot of people.

Affordability is defined as the ability and willingness of the user to pay for services (Peters et al., 2008). Some factors might influence this affordability. This includes income, health care service fees, insurances and level of public funding. Furthermore, a distinction can be made in **direct and indirect costs**. Direct costs include the fees people need to pay, transportation costs, but also a healthy diet to stay fit. Indirect costs consist of income loss due to illness.

People can visit the public dentist for free, if they can show that they are unemployed and have no income. A big number of the interviewed stakeholders stated that they have an insufficient income and therefore rely on public dentistry. When attending the private dentist a fee is required. Fees vary from R30 (extraction) up to R300 (teeth whitening)

The UWC Community Dentistry Department is an important dental stakeholder, the clinics treat a lot of inhabitants from different townships and a lot of people rely on their services. The UWC has dental facilities in Mitchell's Plain (Melomed hospital), Bellville (Tygerberg University hospital) and the department organises different outreach clinics (e.g. in Mfuleni). For the people in Mfuleni, however, it would not be their first choice to attend these clinics (except for the outreach program), due to the fact that there is a good public dental facility closer by and because of travel expenses. However, as stated before, some people are forced to go elsewhere and then often end up in the UWC dental clinics. The UWC dental clinics use a so called 'sliding scale' for determining for the patient's fees. If people can show that they are unemployed and have no income they are in the lowest scale, which means that they only have to pay a small amount (R50 for an intake). According to the Dean of the Community Dentistry Department, a small fee is charged because otherwise people can fraud easily. People with a higher income are in the first scale and therefore pay more. The exact difference between these scales is unknown (Rudolphus 2017).

Amongst the respondents there was a difference in whether people have medical aid or not. Throughout the interviews it was found that all teachers had medical aid. They stated that people who are working for the government, such as teachers, get medical aid without having to pay for it. This allowed them to use a private dentist and private healthcare facilities when neccessary. Also services provided by an oral hygienist, like teeth cleaning, are covered in this medical aid. All teachers stated that whenever their child would need dental services, they would bring the child to a private clinic. However, most parents in Mfuleni do **not have medical aid** and therefore rely on the public dentist. A respondent (teacher & parent) said:

> *'The main barrier is that most of the people here do not have the medical allowance. So it is expensive. That is why they rely on public health services.'*

As stated above, there are many inhabitants that rely on only one public dentist, causing long waiting hours or no service at all for people that come in late. This forces some people to go to a public dentist outside Mfuleni, for example one of the UWC dental facilities. This leads to **higher transportation costs**, due

to the fact that there is a longer travel distance. All stakeholders agreed that **(high) costs** caused by dental problems are an important barrier for some people that prevents them from seeking dental care. Also it was overheard that some parents did not bring their child with decayed milk teeth to the dentist, due to the idea that it is only a matter of time that these milk teeth would be replaced by their permanent teeth, and therefore it is not urgent to spend money on it.

Among the majority of the participants in both the interviews and FGD's there seemed to be a **knowledge gap** about what services the public dentist would provide. Whenever they were asked by the research team if they would go to the dentist for a cleaning or for a check-up, people foremost said that they would not, because it was too expensive. They did not know that this was possible at all. However, people do not realise that these services are for free. Therefore, it was concluded that there is a major knowledge gap when it comes to prices and services of the public dentist. Not having medical aid was mentioned several times as a barrier to visit the dentist, people are not aware that the community clinic is free of charge and also performs preventative dentistry. According to a respondent (teacher & parent):

'For whole my life I went to the public dentist. However, since I became a teacher I have medical aid now, and I can attend the private dentist…The private dentist learned me how to brush my teeth properly and also advised me to come once every year for a preventive check up. He told me this was also possible at the public dentist, but no one actually does it…This was the first time I heard about it.'

Acceptability is defined as whether the health services respond to social and cultural factors and expectations of the healthcare user (Peters et al. 2008). This includes attitudes often based on previous experiences and support of friends, families and the community. The concept acceptability was in general not a topic that people came up with themselves. Only when specifically asked, people gave answers to these questions, while all other barriers often were mentioned spontaneously. With regards to accepting the dentist, all respondents agreed that race, sex or religion of the dentist did not matter as long as they performed their job well (Rudolphus 2017). It was also stated that it depends on people's own beliefs whether they would visit a traditional witchdoctor, the church or a dentist when they have dental problems. As mentioned before, some people believe that certain dental problems are messages from the ancestors and consulting a witchdoctor is the correct way to treat it, and using incense or medicinal herbs is believed to have a painkilling and/or healing effect (Lai 2017).

In terms of acceptability there are also some barriers. It was noticed that the respondents **fear** the dentist. Especially children are in fear of the dentist. They explained that they associate the dentist with experiencing pain due to the fact that there is an 'Extraction-culture'. People only go to the dentist when they are in extreme pain and discomfort (due to lack of knowledge) and by that time extraction is the only thing left to relieve their pain. Of course in dentistry there are other procedures that can be performed, such as a root-canal treatment and placing a crown, but because of the high costs that are involved in such procedures, this is not an option in Mfuleni. Furthermore they are afraid for injections (needles). A respondent (teacher) said:

> *'Local children do not go to the dentist or to the clinic for a check-up. They only go when they feel a lot of pain. When there is something wrong.'*

Also since there is no integration between the service hours of the dentist and the working hours of most parents, they must take a day off to visit the dentist. This leads to **loss of income** for (at least) one day. However, it was stated that the doctor (dentist) is willing to write a letter to show to the employer in case of work absence.

Finally, it was found that **children were not supported by their family** to visit the dentist. The reason for this was that it was believed that it was not necessary for young children to see a dentist, because their milk teeth would be replaced by by their permanent teeth anyway and that it would be a waste of both time and money.

All in all, there are many barriers obstructing Mfuleni inhabitants from visiting a dentist on a regular basis. Children, but also adults, seem afraid of the pain and injections that are associated with dental treament. Also it was overheard regularly that children were not supported by their family to visit a dentist, thereby making it impossible for a child to maintain proper oral health.

Both the private and the public dentist are centrally located and therefore easy to reach throughout the day. However, people are sometimes forced to travel at night (before sunrise), which is a dangerous undertaking due to the high levels of crime in Mfuleni. Also unexpected events prohibit people to visit a dentist.

Furthermore, it can be stated that dental services are very expensive for the inhabitants of Mfuleni. A distinction can be made between people who have and people who do not have medical aid. Medical aid covers all necessary dental services and allows people to visit the private dentist. However, the majority of the people living in Mfuleni do not have medical aid and there fore rely on public dentistry (in which POHC/basic dental treatment is free of charge).

Since this basic service is not always available in Mfuleni itself, people are forced to travel further away, which brings along high transportation costs.

Moreover, the availability of only one private and one public dentist is very poor compared to the number of inhabitants in Mfuleni (100.000) and this is the main reason that people cannot get the service they need or why they have to wait for many hours. Community members are afraid that it might compromise the quality of care. Waiting lists are smaller at the private dentist, since a fee needs to be paid for the services there. Lastly, it can be concluded that there is no match between the service hours of the public dentist and the working hours of the parents and this causes them to miss a day at work.

There is also positive news. All the dental professionals stated that they try to educate their patients when they visit the clinic. The public oral hygienist goes out to schools to promote oral health. A respondent (dental player) mentioned:

'Starting (education) from the creches and then by that time when the child get to school, at least they have already have a oral hygiene background. You know, sort of at least by that time they will know when to brush and how to brush.'

The interviewed dental professionals and teachers suggested that this is necessary, because community members have a lack of knowledge and/or awareness regarding oral health (knowledge gap). The dental professionals believe that people are not (yet) aware of the possibilities of preventive dentistry. In general people only visit the dentist when they have a severe case of toothache.

Unfortunately, a lack of time and means and being understaffed, can limit these educational activities, especially during outreach programs. Another participant (dental player) said:

'The only disadvantage is that there is no going back to see if it is working. And we don't have time, I don't have time to go back and ask them 'did you guys implement it, is it working and things like that.'

The community dental professionals also try to get the message across that their services are free of charge. They say that knowledge and awareness regarding oral health in Mfuleni is currently growing and that some people will even come back for a six-month recall.

Poor nutrition

Recently, it was proved again that not genetic factors are causing tooth decay, but that this depends on a person's behaviour (the diet of a person). It is known that certain bacteria (such as *Streptococcus Mutans*) cause cavities. Moreover, the type of bacteria in the mouth, depends on someone's dietary habits. People with a sugary diet have many bacteria in their mouth which cause

toothdecay, whereas people with a sugar-free diet have a harmless bacterial flora.[20]

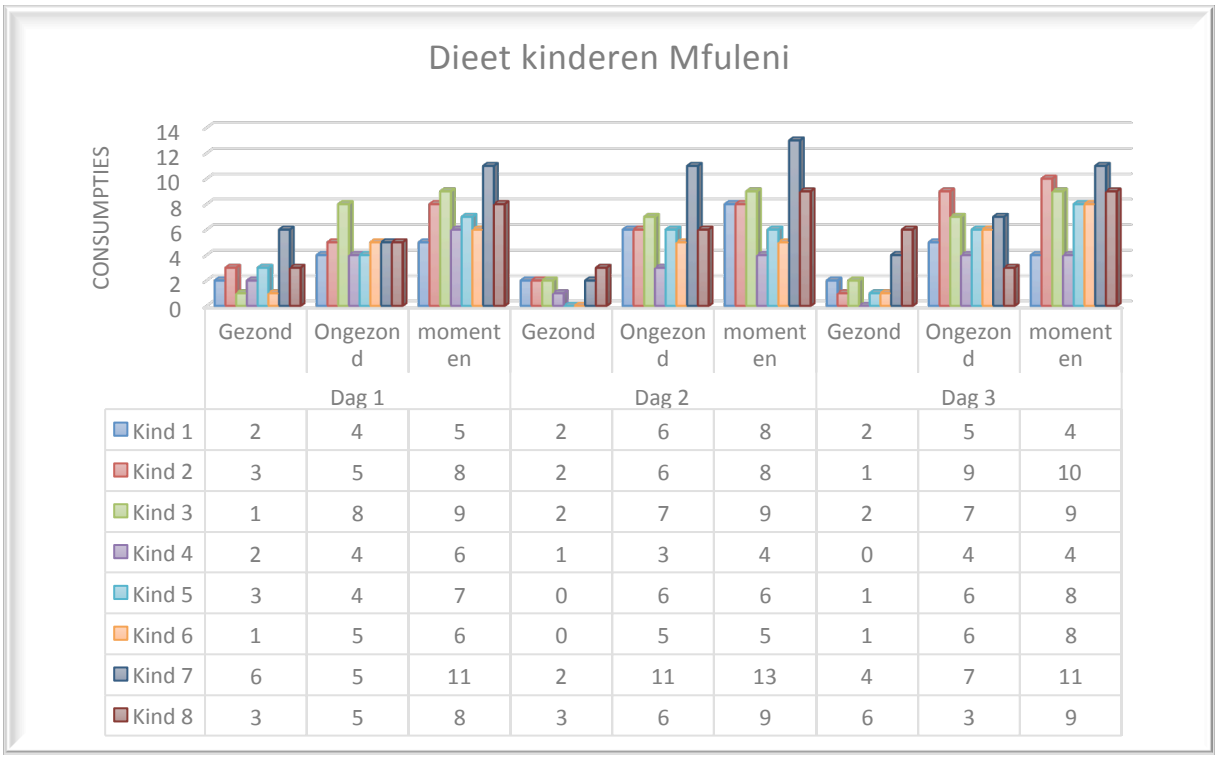
To discover more about the diet of the children in Mfuleni a 3-day dietary anamnesis was filled in by fifteen schoolchildren. In figure 1 it is seen that large quantities of unhealthy food were consumed. Some days children do not consume healthy food, such as fruit and vegetables, at all. Only 3 children out of 8 did eat vegetables one time during the day. From the anamnesis it was furthermore discovered that some children already start consuming sweets and soda's early in the morning. It also was clear that children eat small quantities of food during the day which contain lots of cheap sugars and carbohydrates. Especially lollypops are a pressing problem amongst these children. 6 of the 8 children ate (more than one) lollypops during the day.

In figure 2 it can be seen that the first day half of the children ate more sugar than the recommended 7 sugar moments during the day. On day two 5 out of 8 children ate too much sugar. On the third day 6 children ate too much sugar. It can be concluded that the sugar intake is too high and the number of daily toothbrushing sessions is too low. This leads to serious dental issues in children.

The most important reason for this large sugar intake is the presence of sweet sellers in the schoolyard, who are mostly unemployed mothers that have no other option to survive than by selling sweets to children. They know sugar is bad for children, but they are economically dependent on sweet selling. The teachers do not like this, but they are in a 'conflict of interests'. Itsitsa Primary School is a public school, which means the schoolyard is community property. Teachers stated that they do not know how to tackle this issue, because they feel for the sweet sellers and do not want to drive them out of business. It was suggested that they could change their stock a little and sell more healthy food such as apples and nuts, but people said this would not work because these goods are less popular amongst the customers (children) and are less tenable and quickly spoil.

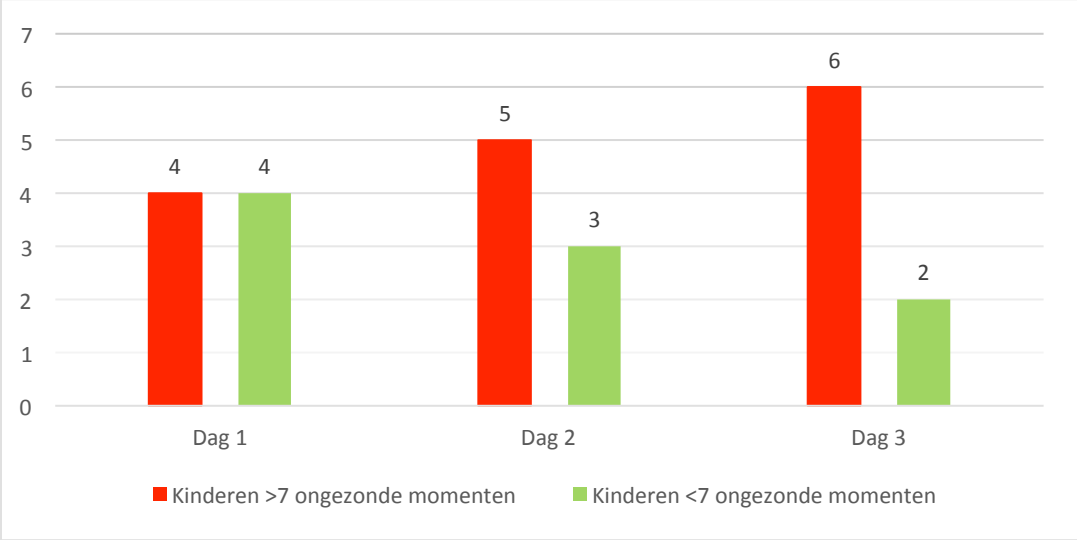
[20] Joep Engels, Slechte tanden erfelijk? Nee hooreen ongezonde mond eet je zelf bij elkaar – Trouw, 2017, https://www.trouw.nl/home/slechte-tanden-erfelijk-nee-hoor-een-ongezonde-mond-eet-je-zelf-bij-elkaar~ad2fe8da/ (14-09-2017).

Figure 1: Diet of children in Mfuleni, derived from the 3-day dietary anamnesis, number of consumptions: healthy versus unhealthy (Bagchus 2017)



	Dag 1			Dag 2			Dag 3		
	Gezond	Ongezond	momenten	Gezond	Ongezond	momenten	Gezond	Ongezond	momenten
Kind 1	2	4	5	2	6	8	2	5	4
Kind 2	3	5	8	2	6	8	1	9	10
Kind 3	1	8	9	2	7	9	2	7	9
Kind 4	2	4	6	1	3	4	0	4	4
Kind 5	3	4	7	0	6	6	1	6	8
Kind 6	1	5	6	0	5	5	1	6	8
Kind 7	6	5	11	2	11	13	4	7	11
Kind 8	3	5	8	3	6	9	6	3	9

Figure 2: Number of sugar moments children have versus number of children (8), derived from the 3-day nutrional amanesis. Red= >7 sugar moments (more than 7 sugar moments a day); Green= <7 sugar moments (less than 7 sugar moments a day) (Bagchus 2017)



2.3.2 Outcomes of poor Oral Health

Poor oral health leads to various negative outcomes. There is overlap between these outcomes and they are often intertwined. The outcomes are the following:

Tooth decay in 80% of children

Over 80% of children in townships suffer from tooth decay and the second most common cause of school absenteeism is toothache. Many children in South African townships have never had a personal toothbrush. Most share theirs with their families.[21] When the team cooperated in the outreach programs with DWT and the UWC it was indeed discovered that the condition of teeth is abominable.

Poor school performance

Next to school absenteeism, concentration levels and school performance are also influenced by the presence or absence of tooth decay. School is the most important place for children to play, learn and grow and to acquire essential life skills. Promoting healthy habits in these learning environments allow children to get the most out of their education. Furthermore, children benefit greatly from school health interventions regardless of their backgrounds. It reduces existing disadvantages and inequalities and provides better chances for a healthy and productive life, according to the Fit for School website.[22]

The 'Fit for School' approach consists of handwashing, toothbrushing, deworming programs, bringing clean drinking water, washing facilities and proper sanitation to schools and cleaning and maintenance of the facilities (hygiene). It has proven to be successful in countries such as The Phillipines and Bhutan. These simple evidence-based interventions address multiple high-impact diseases, such as diarrhoea and tooth decay. The key determinants of health are addressed in a simple intervention package.[23] The DWT method is therefore based on these principles.

Poor self-esteem

Having brown, discoloured and stained teeth and bad breath can lead to bullying by other children, according to the teachers. There is a significant relationship between bullying due to dentofacial features and negative effect on the oral health-related Quality of life (OHRQoL), according to Al-Omari et al. (2014: 734-738). Al-

[21] Live Smart – Dental Charity- Dental Wellness Trust, 2017, http://dentalwellnesstrust.org/projects/livesmart/ (27-08-2017)

[22] Fit Approach – Fit for School, 2017, http://www.fitforschool.international/fit-approach/ (25-09-2017).

[23] Fit Approach – Fit for School, 2017, http://www.fitforschool.international/fit-approach/ (25-09-2017).

Omari et al. quote Al-Bitar et al. and their research looked at the prevalence of bullying and found that bad teeth are the feature most frequently targeted for bullying, followed by strength and weight. The three most commonly reported dentofacial features that bullies focus on are spacing between the teeth or missing teeth, the shape or color of the teeth, and prominent maxillary anterior teeth (Al-Omari 2014: 734-735). Bullying affects the self-esteem of a child tremendously. Poor self-esteem will also affect someone's social position later in life.

Financial losses (direct/indirect)

As mentioned above, there is no match between the service hours of the dentist and the working hours of parents, therefore they must take a day off to visit the dentist. This leads to loss of income for at least one day (indirect costs). Children also miss school. Furthermore, it often costs money to go to the dentist (i.e. transport, intake fee, medication; all direct costs).

School absenteeism

As mentioned above, together with diarrhoea, toothache is the most common reason for school absenteeism. However, these two physical conditions can be easily prevented. In the Phillipines and Bhutan, the 'Fit for School' program was successfully applied to keep children healthy and fit for learning and to prevent school absenteeism. The main aspects of the program are: handwashing with soap and toothbrushing with fluoride toothpaste as daily group activities, completed by biannual deworming. Of course the school needs to have proper and hygienic washing facilities and toilets, as this is part of the principles too.[24] This program is based on the thought: 'Prevention is better than cure' and this is also the basic principle of DWT.

Poor overall health

It is well known amongst dental professionals that having poor oral health can also lead to poor overall health. Hospes, van Dam & Bruers argue that from the literature it can be stated without a doubt that there are relationships in many areas between oral diseases and diseases elsewhere in the body. There is a consistency between the prevalence of Periodontitis and the prevalence of Diabetes Mellitus (type 2), heart and vascular diseases, Rheumatoid Arthritis, certain pregnancy complications (Premature birth, low birth weight of the baby), lung diseases and chronic renal failure. Furthermore, there are indications that

[24] Unknown, 2017, Fit for School Principles – Fit for School, http://www.fitforschool.international/fit-approach/fit-for-school-principles/ (27-08-2017).

there is a link between caries and a low or high body weight (Obesity) and asthma and the development of caries (2014). A healthy mouth resides in a healthy body, one cannot separate the two. Due to the fact that children from Mfuleni township are extra vulnerable to other diseases it is of the utmost importance for them to have a proper oral health.

Lower QoL

Furthermore, having a poor oral health leads to a lower Quality of Life (QoL) and especially a lower oral health-related (OHRQoL), which refers to 'the perceived impact of one's own oral health on daily life' and 'the absence of negative effects of oral conditions on social life and a positive sense of dentofacial self-confidence' (Al-Omari et al. 2014: 735; Kragt et al. 2016: 471). Recently, there has been more attention to the psychological effects of oral health and disease, dental appearance, malocclusion, and treatment of these conditions on psychological and functional well-being (Al-Omari 2014: 735).

According to Kragt et al., children with severe caries at age 6 are more likely to have lower OHRQoL at the age of 10 in comparison to children without caries at age 6. Therefore, it is important to target oral health preventions strategies at young children (2016: 477). The socio-emotional domain of quality of life entails being able to smile, showing of the teeth without embarrassment and/or being teased about the appearance (Al-Omari et al 2014: 735). It can be concluded that also children from Mfuleni that have poor oral health will have a lower quality of life in general.

Unequal disease burden

A country's burden of disease refers to the assessment of mortality, morbidity, injuries, disabilities and other risk factors specific to that country.[25] South Africa's burden of disease was in 2009 on average four times larger than that of developed countries, and in most intances almost double that of developing countries, because it suffered from a quadruple burden of disease.[26] Corrigall et al. (2007) stated that the Western Cape suffers from a quadruple burden of disease, which comprises a 'combination of pre-transitional conditions related to under-development, non-communicable diseases, injuries and HIV/AIDS.' Statistics on the Burden of Disease (BoD) in Mfuleni are not defined. However, due to the fact that, according to Corrigall et al. (2007),

[25] Unknown, 2009, South Africa's Burden of Disease – Econex, https://econex.co.za/wp-content/uploads/2015/07/ECONEX_NHInote_2.pdf (28-09-2017).

[26] Unknown, 2009, South Africa's Burden of Disease – Econex, https://econex.co.za/wp-content/uploads/2015/07/ECONEX_NHInote_2.pdf (28-09-2017).

Khayelitsha township and Nyanga township have a considerable higher BoD that other sub-districts in the City of Cape Town, it is most likely that this is the case in Mfuleni too. Is is a similar area and very close to Khayelitsha.

According to a dentist from the UWC the heaviest burden of dental diseases lies in the poverty-stricken areas (townships), as there are not enough dentists to help everybody and to provide everybody with high quality dental care. This research has shown that this is the case in Mfuleni too.

Maldistribution of Poverty

Maldistribution means 'an uneven, inefficient, or unfair distribution of something'. Poor oral health leads to tooth decay and toothache. Toothache causes poor school performance and school absenteeism. School absenteeism leads to a lower education and a lower education in turn leads to the reduction of chances to get out of poverty later in life. This explains why people from Mfuleni township can be stuck in 'the poverty trap'. The 'poverty trap' is a situation wherein a disadvantaged group of people is stuck in a situation of poverty for generations, constrained by its history and lack of education and human capital (Young-Chul and Loury 2014: 535). However, other inhabitants of Cape Town City Center are very rich in comparison to the township inhabitants, therefore the term maldistribution of poverty is used, an uneven distribution of resources.

Inequality

As explained above, maldistribution of poverty is at the basis of inequality. According to Sibongile Gida, South African society is characterised by a lack of transformation, and a perpetuation of inequality and an unequal distribution of resources. Forty-five per cent of South Africans still live in extreme poverty. Gida thinks that the government should address these greater societal problems, which were highlighted by recent protests (such as #FeesMustFall). Confronting inequality means improving access to all goods and services, including education and access to high quality (dental) care. Gida argues that the lack of access for poor South Africans to education, health and jobs will continue to trigger violence in years to come.[27]

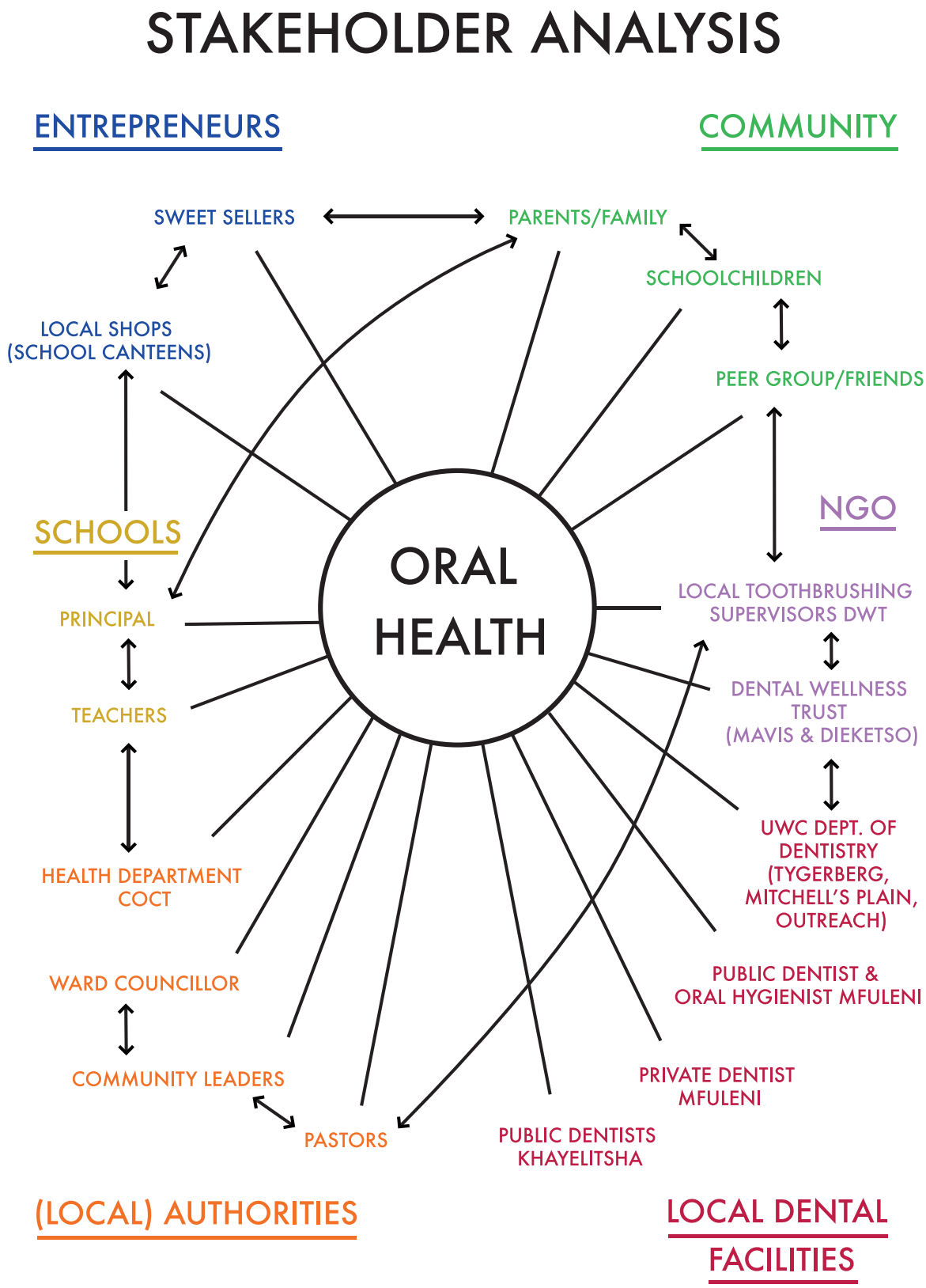
Stuck in 'Poverty Trap'

As the great Nelson Mandela rightfully stated: 'Education is the most powerful weapon which you can use to change the world'. As argued above, education is indeed essential for children from Mfuleni township and

[27] Gida, S., 2015, #Feesmustfall: beyond the rands and cents, http://thisisafrica.me/feesmustfall-beyond-rands-cents/ (10-11-15).

other townships in order to be able to escape the ‘poverty trap’ when they are older. Unfortunately, tooth decay, which 80% of the children from Mfuleni township suffer from, affects their education levels and deminishes their life chances. That is why the DWT projects in townships such as Mfuleni and Khayelitsha are incredibly important.

2.4 Different stakeholders in Oral Health



2.5 What is the problem with Dentistry in Mfuleni?

As shown in the stakeholder analysis above, the team has made a distinction between different key stakeholder groups that are involved in oral health: ***1. The local dental facilities; 2. The NGO; 3. The community; 4. The entrepreneurs; 5. The schools; and 6. The (local) authorities.***

Between the stakeholders that cooperate are connected by means of lines and arrows. The most pressing problem with dentistry in Mfuleni is that currently most stakeholder groups are working in silos. Except for DWT and the UWC Community Dentistry Department, all the other dental stakeholders do not work together. Although all parties have the best intentions, the various dental players seem not to communicate with each other, they are all engaged within their own specific field.

Furthermore, there is a lack of access to dental care in Mfuleni. There are only few dental facilities, there are quite a number of barriers for people to visit these dental facilities, and there is a shortage of staff. Instead of a preventive dentistry culture, people resort to extraction in Mfuleni. There are oral health education programs at schools which are run by different NGOs, the government and/or dental players, but there seems to be no bigger institution that coordinates all these programs. It will not be easy to coordinate these stakeholders. The research team is convinced coordination and cooperation is vital. The local dental facilities can design a standard oral health package, make protocols for the toothbrushing program and make a list of all the different schools and educares that are in Mfuleni to make sure that together they cover to them all with the same program.

Finally, when **the NGO** (Dental Wellness Trust and volunteers) and **the local dental facilities** (UWC Community Dentistry Department, the private dentist and the public dentist and oral hygienist in Mfuleni) would be able to join forces and convince **the (local) authorities** (community leaders, pastors and councillor) of the importance of oral health, the oral health education, handwashing and toothbrushing program for children could be an even bigger success. When the local authorities see the need of an overall approach to tackle oral health issues, they can 'spread the gospel' on oral health during their community meetings. The dental players need to address the issue of the sweet sellers at schools and its effect on children's oral health. Perhaps the leaders can approach these entrepreneurs to change their business slightly and sell healthier food.

2.6 Conclusion

All in all, there are many root causes and negative outcomes of poor oral health amongst children from Mfuleni township. The issue is multi-layered and full of complexities.

Mfuleni is a poverty-stricken and resource-poor setting with complex community structures (which is the case in all townships). Due to poverty, which is the most pressing problem, people do not have the financial means to take proper care of their teeth. Oral health challenges do not exist on their own, but are intertwined with lack of knowledge & awareness, unequal access to resources, poverty, culture, diet, safety issues, barriers to healthcare, and education. Having poor oral health affects children's education levels, self-esteem, health and well-being, chances in life and at the labour market, and quality of life. Bad teeth will keep them stuck in 'the poverty trap'.

Another important problem is that the community members of Mfuleni seem to have a lack of knowledge & awareness concerning oral health. There is a knowledge gap. Although nowadays things are changing and awareness is growing due to education provided to the community by the different dental players, there is still a lot of work to be done and this demands a group effort and cooperation between all stakeholder groups.

3 RECOMMENDATIONS

3.1 Introduction

This research was conducted for DWT. DWT wanted to hear how their organisation can transfer health knowledge in a systemic way that is more sustainable. This research question was taken as a sub question. As a result of this research and DWT's question, the research team has drawn up some recommendations for DWT.

Most importantly, the team thinks DWT should think 'bigger'. They should not just approach schools and educares. The Principal of Itsitsa Primary School rightfully stated:

'….if you come to change the school you won't be doing enough. If you come to change the parents who are having kids to this school that won't be enough, that would be incomplete. You need to take this community as it is. 'Pull the bull by its horns'. Say here we are as Dental Wellness Trust, this is what we want to say the people now. Not the individuals, because here you'll find that in other schools there are siblings of the kid that are here who will know nothing about what you will be doing here.'

He could not be more right. We have drawn up some recommendations together with the community (see also the action plan on page 40). The dental professionals, teachers and parents had many a good idea and suggestions how to improve oral health. Here is an overview:

3.2 Short-term recommendations for DWT

In order to find more toothbrushing volunteers; in order to keep the brushing programs running, and to raise awareness about oral health the following measures can be taken shortly:

- Return to Itsitsa Primary School to sit down with the teachers involved in this research project and check the action plan with them. Discuss if they need more help executing the tasks and ideas that were written down.
- Keep up the communication with the schools/educares. Appoint a teacher to be responsible for the brushing program and to look after the practicalities (hygiene of the sinks, soap at school) and to be responsible for organising meetings with the parents.
- Teachers need to involve parents in the brushing programs at participating schools and thereby raise dental awareness.
- DWT should make unannounced visits and check on participating institutions.
- Address the community as a whole, instead of different entities. This will be more effective. Approach pastors, community leaders (SANCO), and youth forums to bring awareness and get them involved. Pick a place where people can go to learn how to brush their teeth, for example a community hall.

- Visit different churches in Mfuleni and ask the pastor for a moment to talk about DWT and its work in the community to recruit more volunteers.
- Visit the SANCO meetings/community leaders and tell them about DWT and its work in the community. Ask them to 'spread the gospel' to recruit more volunteers.
- When adressing the community leaders, explain the importance of oral health to all members of the community. They are the ones able to reach the whole community most effectively. People in the community look up to and respect their leaders, the community leaders can act as ambassadors of oral health. They can facilitate meetings to spread knowledge and awareness more efficiently.
- Visit the youth forum meetings and tell the youth about DWT and its work in the community. Ask the members to become volunteers.
- Make flyers/pamphlets of the 'Problem Tree' to spread around in the community and to inform people. Translate them in isiXhosa to reach more community members.
- Talk to the ward councillor to tell him about DWT and its work in the community and see if he has funding available for this project. The local government can provide toothbrushes, toothpaste and funding (through the Department of Health) for these health projects (according to the Dutch Consulate General).
- Arrange to be invited at a local radio show (Expresso) and the local TV show (SABC) to tell about the work of DWT (Linda, Mavis & Dieketso).
- Train the reliable and loyal brushing volunteers in oral health education and how to provide trainings to the community concerning a healthy diet. Give them a certificate when they have attended and completed such a training.
- Think about small incentives to the loyal volunteers for their help with toothbrushing. Only their transport costs are covered at the moment. The research team has noticed that community members keep asking if this volunteer work is paid, often because they have no other means of income. The research team agrees with DWT that the volunteers first have to show their commitment, before they will receive a salary.
- DWT can start crowdfunding to raise money for salaries DWT toothbrushing volunteers.
- To attract and keep volunteers DWT can hand out certificates during the trainings. It would be even more attractive if DWT would design a 'Reward System' for certificates. In this way the more hours of volunteer work, the more children under supervision, and the more hours of training a volunteer has obtained, the higher the level of certificate. This can give the unemployed toothbrushing volunteers (community members) better job perspectives.

- There is a plan by DWT and UWC Community Dentistry Department to build a new dental clinic for children in Mfuleni. Reward the most committed volunteers with a paid job as a 'Community Oral Health Promoter'. These ladies can be sent out to schools to provide oral health education. Or train them (internally) as dental nurses to work in this future clinic.

3.3 Long-term recommendations for DWT

To transfer health knowledge in a more systemic and sustainable way DWT can take the following steps in the long run:

- DWT can transfer health knowledge in a more systematic and sustainable way by involving the community leaders, pastors and ward councillors (the local authorities) in the oral health program. When they see the value of 'spreading the gospel', the implication of the oral health education program will be much bigger.
- Involve not only the teachers in the oral health program, but parents as well. Use pamphlets in isiXhosa, as parents are difficult to reach due to the language barrier.
- Make parents address one another at parents meetings on the importance of personal hygiene.
- Furthermore DWT should especially focus on involving mothers, since they make the most important decisions regarding health for their children. Involve mothers by educating them first.
- Educate these mothers on oral health, toothbrushing and a healthy diet in order for them to take up responsibility where DWT stops. Involve them in educational activities and brushing instructions in order to give them more ownership and the opportunity to take responsibility. Make them feel the urge of acting as a role model to the children. People from the community learn by word of mouth, and they copy one another.
- Use visual aids during educational activities and brushing instructions, make it interactive and fun. People learn the best by discussions, repeating and demonstrating (and experiencing) how to brush.
- Educate community members in preventive dentistry. Include information about availibilty and importance of making use of the free dental services such as teeth cleanings, fillings and check-ups in the educational activities.
- Currently all the local dental facilities work in silos. DWT could make more impact if they work together with the other dental players improving access to dental care and improving oral health through applying the 'Fit for School' principles in Mfuleni township.
- Together with the other dental players try to expand dental facilities in Mfuleni to avoid long queues at

the public dentist. Most people are willing to pay a small fee.

- If possible organise more mobile dental clinics to increase the outreach and provide people with oral health education during these outreach programs.
- Start teaching the children at an early age (in creche/educare), to create an oral hygiene routine (habit/knowledge/awareness).

Educate and instruct children so they are able to develop healthy behaviour, which in the future can be passed on to next generations.

- Children will learn more easily by songs, so continue teaching them the fun songs such as the 'Lunchbox Yam' and other educational songs and rhymes.
- Make oral health a subject of discussion in class. Let children practice brushing, because they like to practice. Children eventually will take what they have learned back home.
- Cooperate with different organisations (NGOs), Health Department, Department of Education and local dentists, be aware of the other's activities in the area and consider how the different stakeholder groups can complement eachothers' activities.
- The Department of Education or the councillor could possibly adress the presence of sweetsellers at schools.
- There should be a budget available for health education (prevention) at the Department of Health.

4 Conclusion

By working on oral health in the townships DWT (together with the UWC Community Dentistry Department) creates a healthy environment in which disadvantaged children can go to school without dental pain and discomfort and can learn essential life skills. This will give them a better education, a brighter future, and will eventually create more equality in South Africa.

By conducting this 'Participatory Action Research' 7Senses has helped to give insights into the root causes and outcomes of poor oral health amongst children in Mfuleni. The main research question was: *What kind of intervention, that takes into account the local circumstances, can we co-create for the children age 0-12 in Mfuleni township to improve oral health and to lower school absenteeism?* The intervention was the co-creation of an action plan together with the community (page 60-61). It contains local ideas and solutions. Moreover, this research project has increased awareness and knowledge amongst teachers and parents of Itsitsa Primary School and the DWT volunteers. Our recommendations can help to make future oral health projects in Mfuleni more sustainable. These recommendations were presented in this report to DWT. They are yet to be implemented. It is important to involve the community in the design and implementation of solutions. When DWT manages to make their oral health projects 'community-based' and work together with the local stakeholders, this will create ownership of the projects in Mfuleni. The inhabitant will embrace the solutions.

In February 2018 there will be a follow-up of the 'Healthy teeth Challenge' in Cape Town. This follow up will consist of: an evaluation with DWT and other stakeholders to see how they have implemented or still going to implement these recommendations, an evaluation of the brushing program at Itsitsa Primary School in Mfuleni township, and an evaluation of the action plan (page 60-61).

This PAR has contributed to the Sustainable Development Goals Nr. 3 Good Health and Well-being (ensure healthy lives and promote well-being for all at all ages) through improving the oral health of 2000 schoolchildren because of daily toothbrushing, and Nr. 4 Quality Education (ensure inclusive and equitable quality education and promote lifelong learning opportunities for all)[28] through making sure these children do not miss schooldays because of bad teeth. Prevention is key.

With this pilot research project,

[28] Unknown, 2017, UN Sustainable Development Goals, Sustainable Development Knowledge Platform, https://sustainabledevelopment.un.org/?menu=1300 (28-09-2017).

both organisations (DWT & 7Senses) have worked together towards a world that is socially just by sending out a 'tiny ripple of hope'. According to Robert F. Kennedy:

> *'Each time a person stands for an ideal, or acts to improve the lot of others, or strikes out against injustice, they send a tiny ripple of hope, and crossing each other from a million different centres of energy and daring, those ripples build a current which can sweep down the mightiest walls of oppression and resistance.'*[29]

These ripples of hope are what Mfuleni township needs right now and in the future.

[29] Kennedy, R., 1966, 'Ripple of Hope speech, University of Cape Town' https://www.goodreads.com/author/quotes/98221.Robert_F_Kennedy (03-11-2015).

Annex 1: Literature

Adams, S., Savahl, S. & Fattore, T.

2017 Children's representations of nature using photovoice and community mapping: perspectives from South Africa, *International Journal of Qualitative Studies on Health and Well-Being* 12(1): 1-22.

Al-Omari et al.

2014 Impact of bullying due to dentofacial features on oral health-related quality of life. *American Journal of Orthodontics and Dentofacial Orthopedics* 146: 734-739.

Bagchus, A.

2017 *'The Healthy Teeth Challenge'. De invloed van het dieet op de mondgezondheid bij kinderen t/m 12 jaar in de sloppenwijk Mfuleni, Kaapstad, Zuid-Afrika.* Thesis. Submitted on partial fulfilment of the Requirements for the degree of Bachelor of Health Science. Hogeschool InHolland: 1-39. Unpublished.

Chandra S.B., Raja B.P.

2009 Cultural factors in health and oral health. *Indian journal of dental advancements*; 1(1): 24-31.

Chapman, S.

2013 *Oral Health Beliefs as Predictors of Behaviour: Formative Research for Oral Heath Campaigns in South Africa.* A dissertation presented to the faculty of the Scripps College of Communication of Ohio. In partial fulfilment of the requirements for the degree Doctor of Philosophy.

Clifton, M.C.

2014 Focus on Fluorides: Update on the Use of Fluoride for the Prevention of Dental Caries. *Journal of Evidence Based Dental Practice* 14: 95-102.

Coban, F.

2017 *Cultural Beliefs impacting Oral Hygiene Behaviours in the Mfuleni Township, Cape Town, South Africa.* Thesis. Submitted on partial fulfilment of the Requirements for the degree of Master of Science. Vrije Universiteit: 1-44. Unpublished.

Corrigall, J. et al.

2007 *Western Cape Burden of Disease Reduction Project: Volume 1 of 7: Overview of the report: Meyers, J. and Naledi, T. & Executive summaries of volumes 2-7.* Western Cape Government.

Department of Health

2015 National Policy on Oral Health in Republic of South Africa [Internet]. Available from: http://policyresearch.limpopo.gov.za/bitstream/handle/123456789/1114/national_policy_oral_health_sa.pdf?sequence=1. (27-09-17)

Galtung, J.

1969 Peace, and Peace Research. *Journal of Peace Research* 6(3): 167-191.

Gree, L.W., et al.

1995 *Study of participatory research in health promotion: review and recommendations for the development of participatory research in health promotion in Canada Ottawa.* Royal society of Canada.

Hospes, E., Dam, B., van, Bruers, J.

2014 *Gezonde mond, gezond lichaam! Literatuuronderzoek naar de relatie tussen mondziekten en andere ziekten.* NMT, Nederlandse Maatschappij tot Bevordering der Tandheelkunde: Nieuwegein.

Kindon, S.L., Pain, R., & Kesby, M.

2007 *Participatory Action Research Approaches and Methods: Connecting People, Participation and Places.* Routledge.

Koyio, L.N., et al.

2014 Knowledge of Nairobi East District Community Health workers concerning HIV-related orafacial lesions and other common lesions. *BMC Public Health* 14: 1066-1074.

Kragt et al.

2016 Early age caries predicts low oral health-related quality of life at later age. *Caries Research* 50(5): 471-479.

Naidoo, S., Chikte, U. M., & Sheiham, A.

2001 Prevalence and impact of dental pain in 8-10-year-olds in the Western Cape. *SADJ: journal of the South African Dental Association= tydskrif van die Suid-Afrikaanse Tandheelkundige Vereniging*, 56(11), 521-523.

Njomo, L.M.

2006 *The effects of conflict on the youth of Mfuleni.* Thesis. Submitted on partial fulfilment of the Requirements for the degree of Master of Arts. University of the Western Cape: 1-123.

Peters, D. H., et al.

2008 Poverty and access to health care in developing countries. *Annals of the New York Academy of Sciences*, *1136*(1), 161-171.

Petersen, P. E.

2003 The World Oral Health Report 2003: continuous improvement of oral health in the 21st century–the approach of the WHO Global Oral Health Programme. *Community Dentistry and oral epidemiology*, *31*(s1), 3–24.

Petersen, P. E.

2004 Improvement of oral health in Africa in the 21st century–the role of the WHO Global Oral Health Programme. *African Journal of Oral Health*, *1*(1), 2–16.

Petersen, P.E. & Kwan, S.

2009 World Health Organization plobal oral health strategies for oral health promotion and

disease prevention in the twenty–first century. *Prävention und Gesundheitsförderung, 4*(2), 1 00–104.

Petersen, P. E., Bourgeois, D., Ogawa, H., Estupinan–Day, S., & Ndiaye, C.

(2005) The global burden of oral diseases and risks to oral health. *Bulletin of the World Health Organization*, *83*(9), 661–669.

Petersen, P. E., & Kwan, S.

2011 Equity, social determinants and public health programmes–the case of oral health. *Community dentistry and oral epidemiology*, *39*(6), 481–487.

Rudolphus

2017 *The Healthy Teeth Challenge. A Participatory Action Research study into the barriers of accessing Dental Health Care in the Mfuleni Township, Cape Town, South Africa.* Thesis. Submitted on partial fulfilment of the Requirements for the degree of Master of Science. Vrije Universiteit: 1–59. Unpublished.

Stringer, E.T.

2014 *Action Research. Fourth Edition.* SAGE Publications, Inc.: Tousansd Oaks, California.

Ting–Toomey S.

2005 The matrix of face: An updated face–negotiation theory. In: W. B. Gudykunst (Ed.), *Theorizing about intercultural communication.* xsThousand Oaks, CA: Sage. 4: 71–92.

Thompson, L. et al.

2012 Citizen agency in Khayelitsha. Political participation for better access to resources? *African Centre for Citizenship & Democracy*, pp 1–23.

Wyk, P. J., Van , & Wyk, C., Van

2004. Oral health in South Africa. *International Dental Journal*, *54*(S6), 373-377.

WHO

2013 *Oral health surveys: basic methods*. World Health Organization.

WHO

2017b Oral Health information systems [Internet]. Available from: http://www.who.int/oral_health/action/information/surveillance/en/(14-04-17).

Witte K., Morrison K.,

1995 Intercultural and cross-cultural health communication: Understanding people and motivating healthy behaviors. In R. L. Wiseman (Ed.), *Intercultural communication theory* (pp. 216-246). Thousand Oaks; CA: Sage.

Wreford, J.

2009 Worlds Apart? Religious interpretations and witchcraft in the negotiation of health strategies for HIV/AIDS in South Africa, *CSSR Working Paper* 262: 1-26

Ying Lai, S.

2017 *The Healthy Teeth Challenge. Results knowlegde and awareness about oral health.* Pp 1-8. Unpublished.

Young-Chul, K. & Loury, G.

2014 Social externalities, overlap and the poverty trap. *Journal of Economic Inequalities.* 12(4): 535-554.

Annex 2 List of Acronyms

CoCT	City of Cape Town
DWT	Dental Wellness Trust
FDGs	Focus Group Discussions
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
NGO	Non-Governmental Organization
QoL	Quality of Life
OHRQoL	Oral health-related Quality of Life
SANCO	South African National Civic Organisation
TB	Tuberculosis
TV	Television
UWC	University of the Western Cape
UN	United Nations
WASH	Water, Sanitation and Hygiene
WHO	World Health Organisation

Annex 3: Action Plan 'Healthy Teeth Challenge' (outcomes Focus Group Discussions/FDG's), designed by stakeholders

(Number 1) FGD with canteen ladies + teachers

- Recruited new toothbrushing volunteers recruited (3x). *Implemented*

- Roll out Oral Health Education and handwashing/toothbrushing program at Itsitsa Primary School. *Implemented*

(Number 2) FGD with teachers + parents + candy selling mammas

- New toothbrushing volunteers recruited (1x). *Implemented*

- WhatsApp group: Itsitsa Primary Oral Health Promoters. *Implemented*

- Facebook group: Itsitsa Primary Parents for Oral Health and Nutrition, *Implemented*

- Education groups to spread the message about oral health At Itsitsa Primary School

  - In the churches (theatre play by Mrs. Matiwane). *Yet to be implemented*
  - Sanco meetings. *Yet to be implemented*

- Flyers to spread the message (use Problem Tree) . Target especially pregnant women to start awareness as early as possible. *Yet to be implemented*

- Local radio station (Zibonene). *Yet to be implemented*

- Find sponsors. *Yet to be implemented*

(Number 3) FGD with UWC Community Dentistry Department

- Toothpaste dispensers

  - Look for contacts/possible chemical engineer. *Yet to be implemented*

- Give assignment to engineering students and make it a competition; who has the best model will participate in this project. *Yet to be implemented*

- Build dental clinic in Mfuleni township. *Yet to be implemented*

  - Funding is still a problem

- Outreach clinic to the Itsitsa Primary. *Yet to be implemented*

  - It is a future possibility

(Number 4) FGD with Dutch consulate

- Go to Ward Counsellor meeting (Mavis). *Yet to be implemented*

  - Contact the government through them. The government is obliged to provide toothbrushes and toothpastes; it is the regulation. *Yet to be implemented*
  - Reach the government for sponsoring, because people are in their rights to get funding from the government (Department of health). *Yet to be implemented*

- Approach youth forums. *Yet to be implemented*

- The flyers can be info-graphics. *Yet to be implemented*

- Present the problem tree in Xhosa. *Implemented*

- Contact Cocreate SA. *Yet to be implemented*

- Approach Expresso radio station. *Yet to be implemented*

  - Interview all of us

- Do SABC TV show in the morning. *Yet to be implemented*

  - Interview Linda, Mavis & Dieketso from DWT

- DWT has to make it a challenge for other primary schools. *Implemented*

  - Challenge them to do the same as at Itsitsa Primary (toothbrushing program + oral health education)

Annex 4: Interview guide

KNOWLEDGE:

1. **How would you describe Oral Health?** (What do they know and how do they know this?)

Lay people/Professionals: Can you tell me more about how much you know and how you received this information (experience with OHE -Oral Health Education- formal/informal). Professionals: Can you tell me in what way you have contributed to OHE and how this is setup/organized.
All: is oral health a topic of discussion in general (formal/informal)? Does the dentist/doctor give advice and/or education during consultation/treatment?
Teacher: Did you teach the children about diet and oral health? Did you teach children about how to clean their teeth? How do you think knowledge transfer about oral health can be improved?

2. **How would you describe poor Oral Health?**

What is good oral health?
What is poor oral health?
Do you think bad teeth influences chances in life?
Do you see children bullying each other?
Did you ever not go to school/work because of oral health problems?
If yes, have you ever experienced income loss due to oral health problems?

ORAL HEALTH BEHAVIORS:

3. **How do you clean your teeth now?**

From who did you learn this?
How would you clean your teeth in an ideal situation?
Is there anything that prevents you from cleaning your teeth in the ideal way?
What do you know about the consequences of (not) cleaning your teeth? According to what reasons do you clean your teeth the way you are doing now? What influences this?
How often do you clean your teeth per week? When/Where?
Do you share a tooth brush with family/friends?
In absence of a toothbrush what do you use to clean your teeth?

DENTIST:

4. Have you ever been to a dentist?

If yes, what made you decide to go to the dentist?
What kind of problems?
If yes, how many times have you been there? How often do you go?
Which clinic and why?
If not, why not? Would you go if you had problems?
If not, would you know where the nearest dentist is located?
Can you describe the difference between a community dentist and a private dentist?

5. If your child has toothache, how do you solve it?

6. How would you describe access do dental services? Can you describe possible barriers?

How would you describe the quality of dental services?

7. How do you go to the dentist? (transportation)

If by public transportation: How high are the costs to get to the dentist?
Is this amount of this money a problem for you to go to a dentist?
Are you not going because of this?
How much time does it take?
Is it safe?
If yes, did you feel comfortable?
If yes, did you have a male or female dentist?
If yes, would you go to both a female and male doctor?
Is there a fit between dental service hours and your working schedule?

NUTRITION:

8. What do you think is good/bad for teeth? Do you think diet influences oral health?

What is your opinion a healthy diet?
What do you teach your children?
Where did you get this information?
How important do you think it is to teach children about a healthy diet?
Do you think your children know enough about healthy diet?
Is a healthy diet too expensive or time-consuming?

9. How do you select your food/drinks?

What factors play a role in this decision?
How many times do you eat and drink during a day?
How much money do the children get to buy snacks at school?
Is there a subsidized food program at school? What's in it? Did they took into account the sugar levels?
Can the children eat and drink in the classes?
Do the children influence eachother in buying snacks?

10. What do you think the effect of food is on your teeth? What do you think sugar does to your body?

What do you think sugar does to your teeth?
What is your opinion about the sweet sellers?
Do you know there is a lot of sugar in the sweets they sell?

Annex 5: Informed Consent Forms

Dental Wellness Trust

'Healthy Teeth Challenge'

Information Sheet 2017

The Healthy Teeth Challenge is a research project designed to find out why tooth decay is such a big problem amongst people in Mfuleni township and how it is affected by local circumstances. It will provide valuable information for the dentists and health workers from **Dental Wellness Trust** and **UWC** so they can make the community oral health projects more efficient.

We are asking you for your consent to be interviewed and to answer important questions about dental health by our research team. The answers you give will become part of the research report, but all personal information such as your name, date of birth etc., will be kept confidential. When the research report is published or presented, your identity will not be disclosed. The personal information collected or obtained will be kept confidential and protected.

Your participation in the research will not involve any costs and there is no compensation available. You may also withdraw at any time if you change your mind about participating.

If the researchers are not able to provide dental treatment but if they see any serious dental health problem they will refer you to the nearest dental clinic.

The research team includes Dr. Linda Greenwall of Dental Wellness Trust (DWT), Prof. Neil Myburgh of the Department of Dentistry and Community Oral health of UWC and Alice Grasveld, MSc, working for DWT, assisted by students and community health workers. Their contact details are provided below.

If you are willing to participate, please sign the attached consent form and give it to the research team.

Thanks you for helping us with this research.

Prof. Neil Myburgh
Department of Community Oral Health, University of the Western Cape,
0832600891

Alice Grasveld
Medical Anthropologist/Oral Hygienist
+31 6 28479602

Mavis Phahlindlela:
Mfuleni Brushing Programme Coordinator, DWT
0747323627

'Healthy Teeth Challenge'

Consent Form 2017

CONSENT TO PARTICIPATE

Name: _____

Date of Birth: _____

Home Address: _____

_____

Child Signature: _____

Parent Signature: _____

Date: _____ /_____ / 2017

Participant/Parent/Guardian

By signing this form, I confirm that:

- The research report has been fully explained to me and all of my questions have been answered to my satisfaction
- I have been informed of the risks and benefits, if any, of allowing my information to be used in this research report
- I have been informed that I do not have to participate in this research report
- I have read each page of this form
- I authorize access to my oral health information as explained in this form

Thank you for your participation!

'Healthy Teeth Challenge'

Information Sheet/Consent Form 2017

CONSENT TO PARTICIPATE

The Healthy Teeth Challenge is a research project designed to find out why tooth decay is such a big problem amongst people in Mfuleni township and how it is affected by local circumstances. It will provide valuable information for the dentists and health workers from **Dental Wellness Trust** and **UWC** so they can make the community oral health projects more efficient.

We are asking you for your consent for your child to be involved in a dental prevention program at Itsitsa Primary School, which consists of oral health education and a toothbrushing programme.

The participation in the research will not involve any costs and there is no compensation available, except that the children get a toothbrush. You may also withdraw at any time if you change your mind about participating.

The researchers are not able to provide dental treatment but if they see any serious dental health problem they will refer you to the nearest dental clinic.

The research team includes Dr. Linda Greenwall of Dental Wellness Trust (DWT), Prof. Neil Myburgh of the Department of Dentistry and Community Oral health of UWC and Alice Grasveld, MSc, working for DWT, assisted by students and community health workers.

Name: _____

Date of Birth: _____

Child Signature: _____

Parent Signature: _____

Date: _____ /_____ / 2017

Participant/Parent/Guardian

By signing this form, I confirm that:

- I have been informed of the risks and benefits, if any, of allowing my information to be used in this research project
- I give permission for my child to be involved in oral health education and the toothbrushing programme.

Thank you for your participation!

Annex 6: Interviewlist Respondents

Teachers (Itsitsa Primary School):
T1= Feray
T2= Feray
T3= Sao
T4= Fleur

Teachers (& parents):
T5/ P = Fleur
T6/ P = Fleur

Parents:
P1= Feray
P2= Feray
P3= Feray
P4= Lynn
P5= Sao
P6= Sao
P7= Sao
P8/W= Sao (Witch doctor)
P9= Alice
P10= Alice
P11= Fleur
P12= Lynn

Sweetseller:
S1= Lynn

Witch doctor:
W= Alice, Sao & Feray)

DWT (Volunteers):
DM= Alice, Sao, Fer

Dental nurse (UWC):
D1= Alice

Private dentist Mfuleni:
D2= Fleur

Public dentist and oral hygienist Mfuleni:
D3= Alice, Feray, Lynn & Fleur

Cleaner:
C1= Alice

Principal (Itsitsa Primary School):
H1 = Alice & Sao