

Training manual for Community Health Educators

Understanding Diabetes in Community

UCT School of Public Health and Family Medicine
Health and Human Rights Programme



LEARNING NETWORK

**COMMUNITY SYSTEMS
STRENGTHENING PROJECT**

The Learning Network is a collection of 5 civil society organisations based in Cape Town:

1. The Women's Circle,
2. Ikamva Labantu,
3. Epilepsy South Africa,
4. Women on Farms Project and the
5. Cape Metro Health Forum

The Learning Network serves as the umbrella body in the Western Cape and includes 3 higher education institutions:

1. University of Cape Town (UCT)
2. University of the Western Cape (UWC)
3. Maastricht University, in the Netherlands





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Community Systems Strengthening Partnership
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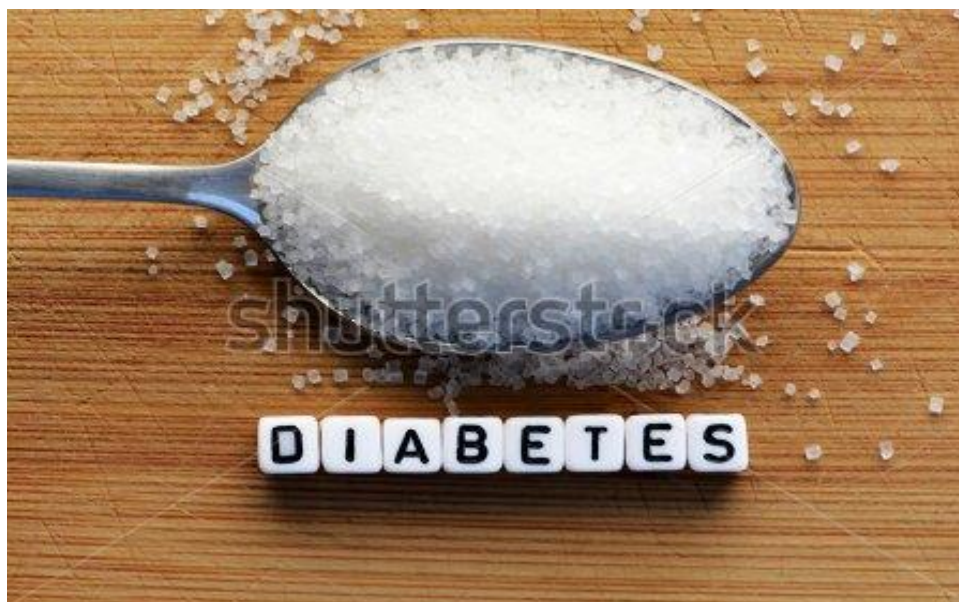
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1. Background

It is generally known that many of the leading causes of death and disability in the world can be prevented. Health risk behaviour that causes chronic illnesses are unhealthy behaviours that one can change. Four of these health risk behaviours—lack of exercise or physical activity, poor nutrition, tobacco use, and drinking too much alcohol—cause much of the illness, suffering, and early death related to chronic diseases and conditions.

While Health professionals play an important role in health promotion at health facilities and in communities, the role of community based health educators and health committees cannot be underestimated. Through the involvement of all individuals, communities and all organisations in health promotion activities, progression of disease can be stopped in its earliest stages. Promoting a healthier lifestyle, access to information, treatment of the causes of illness, early detection through health screening and counselling, and capacity development can reduce death and disability.

Prevention is an integral component of primary health care. Substantial gaps in the delivery of effective health promotion programs in the South Africa remain a challenge. Although more prevention information may be reaching sections of the population, the need for ongoing support and consistent health education messages to reach the more vulnerable populations of the community to overhaul the burden of disease is required. The right to health requires people to participate in their health, and that participation in health will ensure effective people-centred interventions and people taking control of their health.



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Section 1: Understanding Diabetes

Learning Outcomes

By the end of this session, participants will be able to:

1. Understand definition of diabetes
2. Distinguish between type 1, type 2 and gestational diabetes
3. Describe the signs and symptoms of diabetes
4. Understand the risks associated with diabetes disease
5. Know strategies to apply to prevent diabetes
6. Know infections that occur with diabetes (co-morbidity)
7. Discuss diabetes management and the factors that influence treatment outcomes
8. Describe role of patients, health clubs in management
9. Understand the role that Health committees can play to prevent and control diabetes

Activity: 20 minutes

Purpose: Reflecting on behaviours affecting our health

Method: Individual

Material: Pen and post-its

Procedure: Think of your diet, habits and behaviour and list them down. Make a tick on all those that you think are putting you to some kind of health risk? What health risks are these? Will it be easy to stop these if you to have a condition that put you at some risk?

1. What is diabetes? How is it defined?

Definition 1: Diabetes is defined as a condition where the body does not use the sugar that is absorbed from the diet properly. This could be due to a lack of the hormone insulin or because the insulin that is available is not working effectively. There are two common types of diabetes; type 1 and type 2, gestational diabetes is also public health concern.

1.1 Types of diabetes: What types of diabetes are there?

There are many types of diabetes but the most common types are type also known as insulin dependent diabetes. The second type is type 2 diabetes, which is also known as non-insulin dependent or maturity onset diabetes.

Plenary: Communities have their own ways of defining sicknesses including diabetes. These meanings affect how diabetes is managed and controlled. What meanings does your community, family and you have of diabetes?

1.1 Type 1 Diabetes

This is a condition in which the immune system attacks and destroys the cells in the pancreas (an organ behind the stomach) that produce insulin. This damage may lead to complete insulin deficiency. When the body's immune system destroys something of the body, it is called an autoimmune disease. The destruction may take time but when the disease starts, the onset of the effects is rapid and may occur over a few days to weeks. Type 1 diabetes must always be treated with insulin, and will not respond to insulin-stimulating medicines (used for Type 2 diabetes).

The problem with type 1 diabetes is that the person's cells are deprived of the sugar they need for energy. Without the insulin, a hormone produced by the pancreas to control blood sugar, sugar has difficulty entering the body's cells for the body to function well. This causes the body cells to start burning fat for energy; in turn leading to rise in blood sugar levels which can trigger a life-threatening coma. This is termed diabetic ketoacidosis. Diabetic ketoacidosis is a medical emergency that needs to be treated quickly, usually in a hospital setting.

1.1.2 Type 2 diabetes

This type of diabetes is known as a form of diabetes that is not dependent on insulin for treatment. Because it tends to occur in older people within increasing age, it was also known as maturity-onset diabetes mellitus. The number of people with type 2 diabetes is rapidly increasing. Type 2 diabetes is a medical condition that occurs when the body does not produce enough insulin to meet its own needs. This is known as insulin resistance.

Most individuals with the condition may be unaware of their disease especially at early stages as there may be no specific symptoms. Type 2 diabetes usually develops gradually over time, which means that it becomes worse over time, and will eventually need medications to treat it. People almost always develop prediabetes before being diagnosed with type 2 diabetes. Prediabetes is sometimes referred to as impaired glucose tolerance (IGT) or impaired fasting glucose (IFG), depending on the type of test used to detect it. Prediabetes condition means that someone has higher than normal blood glucose (blood sugar) levels, but not quite high enough to be diagnosed with type 2 diabetes.

1.1.3 Gestational Diabetes

Gestational diabetes is when pregnant women who have never had diabetes before but who have high blood glucose; the main sugar found in the blood and the body's main source of energy. The cause of gestational diabetes is not well understood. During pregnancy, the placenta supports the baby as it grows. There are hormones from the placenta that help the baby develop.

It is believed that these hormones also block the action of the mother's insulin in her body. This problem is called insulin resistance. Insulin resistance is the body's inability to respond to and use the insulin it produces. Gestational diabetes starts when your body is not able to make and use all the insulin it needs for pregnancy. Without enough insulin, glucose cannot leave the blood and be changed to energy.

Placenta: An organ that develops in your uterus during pregnancy. It provides oxygen and nutrients to your growing baby and removes waste products from your baby's blood.

Hormones: Chemical messengers that are secreted directly into the blood, which carries them to control most major bodily functions

Activity: 15 minutes

Purpose: Reflecting on effects of diabetes on person and family

Method: Individual

Material: Pen and paper

Procedure: If you were to learn that you have gestational diabetes or at risk of getting diabetes, what are the first things you would do or think of? What kind of reaction will this bring to you and your close family?

1.2 What is the Difference between Type 1, Type 2 and gestational Diabetes?

Type 1 diabetes usually starts in childhood or young adulthood, whereas type 2 diabetes usually starts in adulthood. In patient with type 1 diabetes, the body's immune system attacks and destroys pancreatic cells (Beta cells) that produce insulin.

In patient with **type 2 diabetes**, the pancreas is not attacked and usually produces insulin. However, patient with type 2 diabetes, for many reasons, cannot use the available insulin effectively. People with type 2 diabetes can have the same symptoms as patient with type 1 diabetes, but type 1 diabetes symptoms that occur more rapidly. Type 1 diabetes cannot be prevented, but type 2 diabetes can be prevented or delayed with a healthy lifestyle.

Gestational diabetes on the other hand, is a health condition that develops during pregnancy in which high levels of glucose in the blood are noticeable without ever previously having diabetes. This is as result of failure of the body to produce enough insulin to absorb the glucose. Although gestational diabetes occurs to pregnant women who have never had diabetes before, it is possible that after childbirth the mother may go on to develop type 2 diabetes.

1.3 Diabetes in children

Activity: 20 minutes

Purpose: Reflecting on behaviours affecting our children's health with diabetes

Method: Group

Material: Pen and paper

Procedure: Younger children are known to be exposed to bullying at schools, while peer pressure may be a challenge for teenagers. What is the worst thing that can happen if these diabetic children and teenagers were to suffer from these cruel acts with their diabetic treatment in their schools or crèches'? How can health committees assist in managing this situation?

Children just like adults are also at risk of getting diabetes. Diabetes in children has been linked to the doubled number of children and tripled number of adolescents that are obese over the last 30 years. Obesity has not only presented risks, but has created both health and well-being problems for teens. Recent study shows that one out of three children and teens between the ages of two and 19 are overweight, or obese. This age group is mostly affected by type 2 diabetes; especially amongst 10 and 19 years old.

Children and teens living with diabetes condition present them with a lot of challenges and most of the time, it robs the children of their freedom to enjoy their childhood as it is a chronic infection. Their lives are affected in a big way, for example, simple things, like going to a birthday party, playing sports, or staying overnight with friends need careful planning. As a chronic disease it means that they may need to take insulin or oral medication every day, sometimes more than one time a day depending on the treatment regimen.

The condition may also requires them to check their blood glucose several times during the day and remember to make correct food choices. These tasks can be particularly bothersome for teens. For school-age children, these tasks can make them feel 'different' from their classmates and become exposed to discrimination. For any child or teen with diabetes, learning to cope with the condition is a big and daunting. Dealing with a chronic illness such as diabetes may cause emotional and behavioural challenges. Talking to a school nurse or psychologist may help a child or teen and his or her family learn to adjust to lifestyle changes needed to stay healthy

2. History of diabetes

Diabetes has existed since ancient times.

250 BC - The term diabetes was probably invented in Ancient Egypt when it was occupied by the Greeks

980–1037 – The Persian scientist Avicenna provided a detailed account on diabetes mellitus in “The Canon of Medicine” including describing in details the symptoms of diabetes.

1425 - Diabetes is first recorded in English, in the form diabete, in a medical text written around.

1675 - Thomas Willis added the word “mellitus” to the word diabetes. This was because of the sweet taste of the urine.

1776 - Matthew Dobson confirmed that the sweet taste of urine of diabetics was due to excess of a kind of sugar in the urine and blood of people with diabetes

1936 - Sir Harold Percival (Harry) Himsworth in his published work differentiated two types of diabetes as different entities.

Did You Know? The term diabetes is the shortened version of the full name Diabetes Mellitus. Diabetes Mellitus is derived from the Greek word diabetes meaning siphon – to pass through, and the Latin word mellitus meaning honeyed or sweet. This is because in diabetes excess sugar is found in blood as well as in the urine. Diabetes was known in the 17th century as the ‘pissing evil’

PLENARY ACTIVITY: In South Africa like in many other countries, communities have developed their own names for many chronic conditions such as diabetes. What are some of the most common names given to diabetes in the South African context and what are stories behind these names? 20 minutes

3. How common is diabetes in South Africa

It is estimated that 7% of South Africans between the ages of 21 and 79 years are living with diabetes. This is 3.85 million South Africans in this age group. Rates have gone up over the last 15 years. Compared to 415 million people who have diabetes in the world, more than 14 million people are in the African Region. It is anticipated that this amount will double by 2040.

In South Africa, the recent small study done (3,820 people) showed that only 38 per cent of those who tested positive for were aware of their condition. Most people who were aware were on treatment, but it was only effective in 24 per cent of cases. Limited awareness and ineffective treatment meant that only eight per cent of people with had their condition under control, compared to a rate of 14 per cent in India, the highest of the six countries studied. For poorer people living in rural districts rates of control were particularly low. For this reason, not only is diabetes common, it is a difficult disease to manage.

4. The signs and symptoms of type 1 diabetes in children and adults

Some symptoms and warning signs are common in both type 1 and type 2 diabetes.

Symptoms associated with high blood sugar:

- a. Being very thirsty
- b. Feeling hungry
- c. Feeling tired all the time
- d. Having blurry eyesight
- e. Feeling numbness or tingling in your feet
- f. Losing weight without trying: Patient with type 1 diabetes develop unintentional weight loss and an increase in appetite because blood sugar levels remain high and the body metabolizes fat for energy. Excess urination also cause weight loss because many calories are leaving the body in urine.
- g. Urinating more often (including urinating at night, or, in children, wetting the bed)
- h. Skin Problems: High risk of bacterial and fungal infections. Poor blood circulation in the skin may also occur. Common fungal infections include athlete's foot, vaginal yeast infection in women, jock itch, ringworm, and diaper rashes in babies. Diaper rash caused by the yeast *Candida Albicans* can spread to other areas of the body such as the stomach and legs.

Symptoms of diabetic ketoacidosis include the following:

- Deep, rapid breathing
- Dry skin and mouth
- Flushed hot skin or face
- Fruity breath odour
- Nausea or vomiting; inability to keep down fluids
- Stomach pain

(ii) Symptoms associated with low blood sugar:

Sometimes, patients with Type I diabetes can have swings of blood sugar. This means they might develop low blood sugar (hypoglycaemia) if they are taking insulin. Symptoms include:

- a. Headache
- b. Hunger
- c. Nervousness
- d. Rapid heartbeat (palpitations)
- e. Shaking
- f. Sweating
- g. Weakness

5. Who is at risk of getting diabetes?

There are different classifications of risks that can put people at risk of getting diabetes. They are discussed separately under risks for type 1 and type 2 diabetes.

5.1 Risks for Type 1 diabetes:

Some known risks for type 1 diabetes include:

Genetics: The presence of certain genes increased the risk of developing type 1 diabetes.

Age: Although type 1 diabetes can appear at any age, it appears at two noticeable peaks. The first peak occurs in children between 4 and 7 years old, and the second is in children between 10 and 14 years old.

Viral infections: Researchers have found that certain viruses may trigger the development of type 1 diabetes by causing the immune system to turn against the body—instead of helping it fight infection and sickness. For example, German measles and mumps are examples of viruses that are believed to trigger type 1.

Race/ethnicity: Certain races and ethnic groups have higher risks of getting type 1 diabetes.

Family history: Since type 1 diabetes involves an inherited susceptibility to developing the disease, if a family member has (or had) type 1, you are at a higher risk. If both parents have (or had) type 1, the likelihood of their child developing type 1 is higher than if just one parent has (or had) diabetes. Researchers have noticed that if the father has type 1, the risk of a child developing it as well is slightly higher than if the mother or sibling has type 1 diabetes.

Early diet: Researchers have suggested a slightly higher rate of type 1 diabetes in children who were given cow's milk at a very young age.

5.2 What are the risks for type 2 diabetes?

Although there are no major symptoms for Type 2 diabetes, speaking to a doctor and taking a simple blood test is the only way to truly determine if you have Type 2 diabetes. However, there are certain factors that put some people at higher risk for type 2 diabetes, such as:

- a. Being overweight or obese
- b. Not being physically active
- c. Having a parent, brother or sister with type 2 diabetes
- d. Being over the age of 45
- e. If you're a woman, having a history of diabetes during pregnancy (called gestational diabetes)
- f. Men are most likely to develop Type 2 diabetes than women.

Some other risk factors include:

- Certain medications can increase your chances of getting diabetes.
- A diet that is low in fibre, but raised blood sugar: There has been a dramatic rise in diabetes in Africa. The main reason has been increasing urbanisation, rising obesity and the distribution of unhealthy foods by large corporations marketing package and processed foods. People adopt a diet high in fat, sugar and salt, and get far less exercise than previously.

5.3 Gestational diabetes and risks for mother, the foetus and baby

A foetus growing inside a woman who has diabetes may be exposed to high levels of blood glucose (sugar in the blood) during the pregnancy if the diabetes is not well controlled. This may result in excessive birth weight, obstructed labour, low blood sugar, prematurity (pre-term birth), Respiratory distress syndrome, problems with the concentration of salts in the blood of the new-born, genetic malformation and in severe cases, death of the new-born.

Gestational diabetes can also have an impact on the mother. Women who suffer from gestational diabetes are more likely to get type 2 Diabetes Mellitus later on in their lives. They are also at increased risk of gestational diabetes for any successive pregnancies.

Group Activity: Critically read the following case scenario below and write down the lessons that you learnt from it. What do you think has assisted Susan in managing her diabetes, or what has not been helpful in managing her diabetes and what advise can you give her?
20mins

My day to day journey with diabetes: Sean's diabetes journal

"When I was diagnosed with diabetes, it was a surprise. I didn't feel unwell, but I had been losing weight and I felt thirsty all the time. I was drinking lots of water and going to the loo more often. I had to get up twice in the night to pass urine, which wasn't normal for me.

Seeing the doctor:

When I described my symptoms to the doctor, he said it sounded like diabetes symptoms. Blood tests confirmed I had type 1, which usually develops earlier than 43, but can develop in older people. I was worried because I didn't know anything about diabetes. I didn't like the idea of giving myself injections. At first, I was given tablets to stimulate the pancreas to produce insulin. I also had to change my diet. I needed to avoid sugar, so I gave up cakes, chocolates, sweets and sugar in my tea and coffee. It wasn't as difficult as I'd expected, but I confess I still eat cakes every now and then."

Fried and sugary food:

"The doctors also recommended a healthy diet with no fatty foods, so no chips or anything else fried. I loved sausages, eggs, bacon and jam, it was too hard to give them up, this is what I have been eating my whole life...I could not imagine my world without these... "I ate more fibre and fruit (but fruit is sugary, so I don't have more than three portions a day), steamed or boiled vegetables and grilled meat. It was a normal diet, really. I could go to a restaurant with friends and order from the menu easily.

"I taught my partner some few dishes, including pot-roasted beef. You put oil and sugar in a pot, caramelise the sugar, then add the meat so it gets a nice distinctive flavour and colour. I should stop eating it, but we still have it once in a while.

Insulin injections:

"After a year of managing my diabetes with tablets and a healthy diet, I had to start insulin injections. My glucose levels were rising, and I felt lethargic.

"When blood sugar levels get too high, I feel tired and can't deal with problems so well. When the doctor told me I had to start injections, he stuck a syringe into his own stomach to show me it wasn't that bad. The needles are so good that you don't feel anything. I inject into my stomach before every meal, then at night. I inject a long-lasting insulin that releases slowly over the next 14 hours.

Blood sugar levels:

"I also have to test my blood sugar levels before every meal with a finger-prick kit so I know how much insulin I need. These days, I don't always test before each meal because I can guess my blood sugar by how I feel. But I do at least two tests a day. When you've taken your insulin, you need to eat soon afterwards. I forgot once, when some guests arrived unexpectedly. I put some chairs out in the garden, forgetting I'd just taken my insulin. Next thing, I collapsed on to the kitchen floor, so my partner called an ambulance. "I was taken to hospital and stayed there until night time. My blood sugar levels had fallen too low. I was OK in the end. I almost had a hypoglycaemic attack and there is a risk that I could had fallen into a coma. This can be fatal."

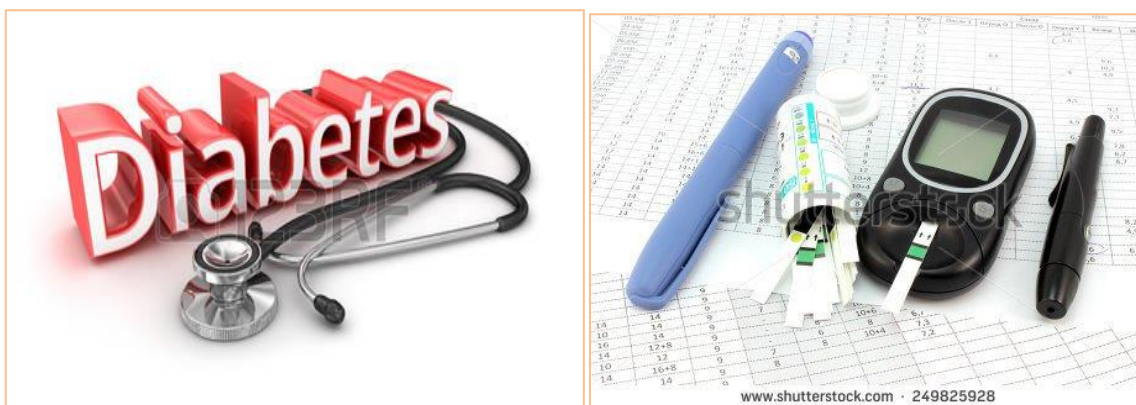
Eye problems:

"As well as a healthy diet, doctors recommend exercise and watching my weight. They say 30 minutes of exercise a day, such as walking, is good. I don't take exercise, but I should. I've put on a little weight recently, and I see a dietitian. "Because of the diabetes, I've had problems with my eyes. I've had laser surgery in both of them because of diabetic retinopathy (damage to tiny blood vessels in the eye). I go for regular eye checks, and I visit the hospital every six months for blood checks and to check my feet for diabetic foot disease which is caused by the damage to the nerves, very common in diabetes

"The other way diabetes has affected my life is that I have to be careful when I'm on holiday. I have to carry all my medication as hand luggage, so I bring a letter from my doctor explaining that I'm diabetic and need to carry insulin syringes. "I can visit my GP if I want to ask questions about my health, but I don't go often. I can manage the diabetes very easily. It is a lifelong journey, you need to learn about the disease, accept your condition and get lots of support

6. Diabetes tests and diagnosis

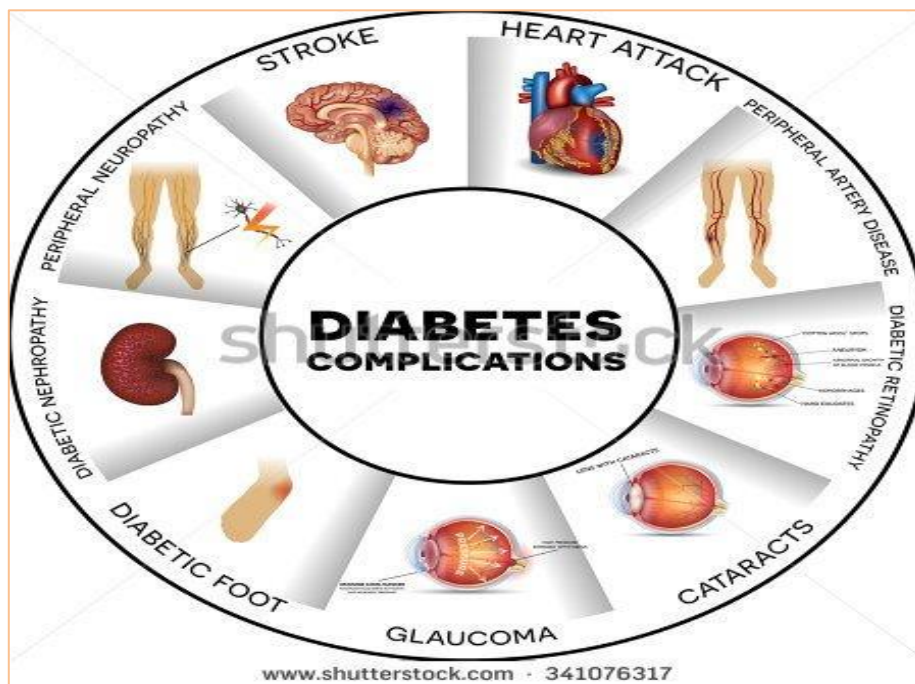
You can only know if you have diabetes by going to your local clinic or hospital to test. There are a number of tests done to diagnose diabetes. A screening (finger prick) blood test done at the clinic or pharmacy will give an indication of your blood sugar level. A normal fasting blood glucose level is between 4 - 5.6 mmol/l, while for non-fasting (tested at any time during the day) 4 - 7.8 mmol/l is acceptable. When the blood sugar levels are above these limits, a doctor would need to do formal test to diagnose diabetes. You would be required to fast for eight hours and a blood sample is taken to test the glucose level. Diabetes can be diagnosed when the fasting blood glucose level is 7 mmol/l or higher.



Picture 1. http://www.123rf.com/photo_46737615_diabetes-text-3d-medical-concept.html. Picture 2: www.shutterstock.com: Royalty free picture

7. Complications and consequences of diabetes

There are diseases that occur with diabetes and these are serious and life threatening diseases. The heart and stroke diseases are the leading cause of death in diabetics. The constant high blood sugar causes narrowing of the arteries, increased blood triglycerides (a type of fat), decreased levels of HDL (“good”) cholesterol, high blood pressure and heart attack. Diabetics are also more prone to the development of atherosclerosis and blood clot formation. Diabetes also increases the damage done by smoking, high blood pressure and high cholesterol. Diabetes can even affect the heart muscle itself, making it a less efficient pump. As you can see, diabetes increases the risk of stroke and heart disease, especially if other risk factors are already present. The risks multiply! Here are some below:



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Picture: Complication and Consequences of diabetes

Eyes: Diabetes can lead to eye problems, some of which can cause blindness if not treated, these are glaucoma, cataracts, diabetic retinopathy

- **Kidney Disease**
- Nerves
- **Peripheral diabetic neuropathy** can cause pain and burning or a loss of feeling in your feet. It usually starts with your toes. It can also affect your hands and other body parts.

- **Autonomic neuropathy stems** from damage to the nerves that control your internal organs. Symptoms include sexual problems, digestive issues (a condition called gastroparesis), trouble sensing when your bladder is full, dizziness and fainting.

DID YOU KNOW: Starvation treatment: In 1919 Dr. Frederick Allen of the Rockefeller Institute in New York published his “Total Dietary Regulations in the Treatment of Diabetes” that introduced a therapy of strict dieting or starvation treatment – as a way to manage diabetes. Do you think this was the BEST treatment for diabetes? List things that may have happened to patients following this kind of treatment? Is this an effective treatment?

Section 2: Management of diabetes

It is always better to prevent than to cure, but if one has to cure or treat, specifically a chronic medical condition, a good attitude and commitment is very important and will determine how the disease will be managed. There are adjustments that have to be made, behaviours and habits that have become part of our lives that we have to do away with to control and manage the disease. But overall the goal of diabetes management is to bring blood glucose levels into the normal range, that is, between 4-6mmol/l. There are various aspects to good diabetes management, making good healthy choices is one of them.

#THERE ARE GOOD HEALTHY CHOICES TO BE MADE#



<http://www.healthline.com/health/tips-treating-diabetic-nerve-pain>

8. Treatment of Type 1 diabetes

People with type 1 diabetes (insulin dependent) require daily injections of insulin to survive. Although there is no cure for type 1 diabetes, there are various types of insulin available in South Africa. Insulin is a medicine that must be injected under the skin using a syringe, insulin pen, or insulin pump. Insulin can be short-acting, medium-acting or long-acting.

Some people make use of a pump which continually supplies the body with insulin. Insulin needs to be taken:

1. At regular intervals
2. As injections
3. During the day after meals - replaces that which the body is not providing.

Type 2 diabetes also known as maturity onset or non-insulin dependent is controlled through exercise and meal planning and may require diabetes tablets and/or insulin to assist the body in making or using insulin more effectively. Lifestyle Management – learning to reduce stress levels in daily living can help people manage their blood glucose levels. Smoking is particularly dangerous for people with diabetes

Picture: Insulin Pump; syringes and pills for treatment of type 1 and type 2 diabetes



<https://www.shutterstock.com/search/diabetes>

! Insulin Shock: Although insulin is a wonderful drug that helps people with diabetes, it needs to be used carefully. If a person takes too much insulin it is possible the blood sugar level will lower into dangerous levels. This situation is termed insulin shock or an insulin reaction (low blood sugar due to excessive insulin).

Too much insulin can result in symptoms that may be mild, moderate, or severe, depending on how low and how long the low blood sugar levels exist in a person's blood. Some signs and symptoms of low blood sugar include fatigue, excessive yawning, mild confusion, decreased coordination, sweating, muscle twitching, and pale skin. As these symptoms get progressively worse, seizures, loss of consciousness and even death may occur.

People with diabetes, especially type 1 diabetes, are advised to carry about 15 grams of a quick-acting carbohydrate at all times. Quick-acting carbohydrates are foods or drinks containing glucose that is rapidly absorbed into the body and the blood. Examples include a half-cup of fruit juice or a non-diet soda, sweets, two tablespoons of raisins, one cup of milk, or three glucose tablets.

These carbohydrates may resolve mild to moderate insulin reactions. For severe reactions, a drug called glucagon should be injected under the skin by a family member or friend familiar with treating severe insulin reactions and the person should be seen by a medical health care professional.

In addition to insulin, management of diabetes requires:

- ✓ A healthy diet and adequate physical exercise.
- ✓ Foot care - Get a foot examination at least twice a year with your doctor, and learn whether you have nerve damage.
- ✓ Treat minor infections, such as athlete's foot, right away
- ✓ Make sure you wear the right kind of shoes. Ask your doctor what kind is right for you.

Other treatment may be prescribed to reduce common complications of diabetes, including:

- ✓ Eye disease – the lining inside the eye (retina) is damaged
- ✓ Kidney disease:
- ✓ Heart disease and stroke.
- ✓ Poor wound healing and gum repairs
- ✓ Studies suggest that up to 50% of people with diabetes are affected by nerve damage to some degree. Nerve damage can lead to sensory loss and damage to the limbs especially the arms and legs and this is called stocking-glove numbness/tingling. Nerve damage can also affect autonomic functions leading to sexual dysfunction

Myth or Fact? People often say 'healthy eating plan is expensive and can only be afforded by rich people'. Is this a fact or myth? How can a diabetic enjoy an affordable healthy eating plan without paying too much; and without compromising his or her cultural beliefs and or traditions? What foods can you advise her or him to eat? What foods are not good for diabetics? 20 minutes



Remember to consult with your doctor before trying any new or alternative treatments. Even if they're natural, they can interfere with current treatments or medications

8.1. Side effects of diabetic treatment

Different types of good medication can also cause side effects. A side effect is an unwanted issue that is caused by a medicine. Some side effects such as nausea or an upset stomach are very common. Your health facility staff will be able to advise you about specific side effects of your medication, the best ways possible to avoid them and what to do when more severe side effects occur. Often in the case of diabetes, certain drugs present temporal side effects. Health committees can also assist in monitoring treatment literacy on these medical conditions.

Potential side effects of common diabetes drugs

- Low blood sugar, upset stomach, skin rash or itching, weight gain
- Sickness with alcohol, kidney complications, upset stomach, tiredness or dizziness, metal taste
- Gas, bloating and diarrhoea
- Risk of liver disease, anaemia risk, swelling of legs or ankles.

8.2 Factors influencing treatment outcomes in diabetes

A major barrier to achieving optimal blood glucose control in patients with type 2 diabetes is the association of improved glycaemic control with weight gain. Fear of weight gain has also been linked to reduced treatment adherence in both patients with type 1 diabetes and those with type 2 diabetes.

Adherence to treatment has been seen as one of the major factors influencing treatment outcomes, these are:

- **Administration of insulin.** People get tired of administering their insulin
- **Diet:** Lack of adherence to prescribed dietary recommendations have been inconsistent.
- **Physical activity and other self-care measures.**
- **Duration of disease:** Because diabetes is chronic, this appears to have a negative relationship with adherence: the longer a patient has had diabetes, the less likely he or she is to be adherent to treatment.
- **Poor health service delivery of care for diabetes:** Vulnerable groups in our communities generally attend local health care facilities. **Intra-personal factors:** Seven important variables have been associated with adherence: age, gender, self-esteem, self-efficacy, stress, depression and alcohol abuse

- **Stress and emotional problems:** are also linked with adherence.

Primary factors influencing treatment can therefore be divided into two groups:

- 1) External influencers, or
- 2) Patient experience.

External influencers are all of the factors outside of a patient's control that have the potential to impact compliance.

Activity: 15 minutes

Purpose: Exploring community beliefs on treatment and management of diabetes

Method: Group

Material: Pen and paper

Procedure: What alternative medicines are used to manage diabetes in your community? Are they effective? Who supply this medication? Would you encourage diabetics to use alternative medication that are not prescribed by the health facility, discuss as a group

Section 3: Diabetes Prevention



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9. Diabetes Prevention: What strategies can we use to prevent diabetes?

To be healthy is the goal and desire of everybody, yet this is not always easy to achieve due to a variety of reasons, some beyond our reach, for example, the diseases that run in our genes and family. However, we also have diseases that we can prevent or delay, especially if we know that we may be at risk. Prevention is always the best option, as the cost of treatment and lifestyle changes may add a burden to individual affected and their families.

Activity:

Purpose: To reflect on community behaviours that affect diabetes

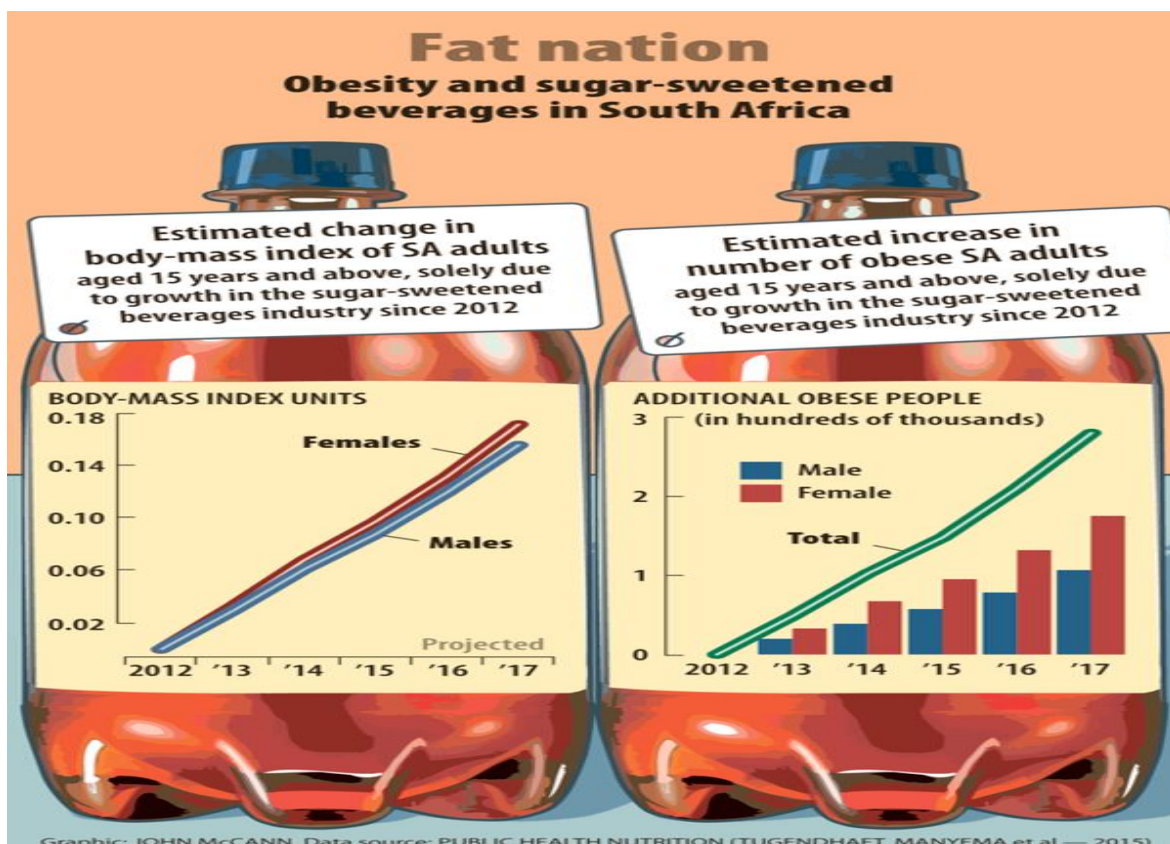
Method: Group

Material: Pen and paper

Procedure: Do you think the sugar tax below will reduce sugar intake amongst your community people? What behaviours are your community members engaging in that has high levels of sugar; and what messages can you use as health committees to discourage this behaviour, starting with you and your own families?

9.1 The introduction of Sugar Tax as a prevention strategy

South Africa followed the footsteps of other countries, such as Mexico, by introducing a sugar tax - levied on sweetened sugar beverages (SSBs), to be effective from 1 April, 2017. This main aim of this tax is to discourage unhealthy eating habits that have led to the increasing rates of obesity in the country. Obesity is root cause of many illnesses and chronic diseases including diabetes in Sub-Saharan region.



Graphic: John McCann, Data source: Public Health Nutrition (Tugendhaft, Manyema et al – 2015)

Did You Know: Cultural beliefs also play a big role in managing diabetes. According to registered dietician Suna Kassier, many African communities enjoy gaining weight as this is believed to show that they have achieved something.

Furthermore, gaining weight carries the status in that “It signifies dignity and respect, and shows that you’re enjoying wealth and a good life. On the other hand, being thin carries a stigma which is “associated with hardship, trouble at home and serious illnesses such as TB or HIV/Aids.”

Plenary: Reflect on the statement above and say whether this is true or not in your community? What others beliefs and traditions may have undesired outcomes in diabetes prevention? 10 minutes. How does stigma influence the way people in general approach their disease.

9.2 A comprehensive approach to diabetes prevention

High-quality structured education can have a profound effect on health outcomes and can significantly improve quality of life of the community. The potential benefits of an effective education programme for people with or without diabetes include.

- Improving knowledge, health beliefs, and confidence to enable people to make healthier lifestyle changes and dispel myths. With improved knowledge, communities are able to challenge entrenched ineffective remedies and practices. This will in turn improve their quality of life thus improving their vulnerability to disease.
- Improving patient outcomes – e.g. weight, haemoglobin, lipid levels, smoking, and psychosocial changes such as quality of life and levels of depression. Improving patient outcomes will help to increase life expectancy of diabetics and their infants.
- Improving levels of physical activity.
- Reducing the need for medication and hospitalisation: Prevention is better than cure. People are encouraged to adopt a healthy lifestyle enjoying their quality of life in a natural way, so that their bodies can handle and fight off infections on their own. Prevention means that people will also be encouraged to go for immunisation, screening, tests,
- Monitoring and early intervention for complications of diabetes, including cardiovascular disease, feet problems, eye problems, kidney problems and neuropathy.

- Diabetes education must be flexible enough to suit the needs of the individual – e.g. cultural, language, cognitive (level of understanding) and literacy needs. People with diabetes should be regularly screening for complications – such testing one’s heart, one’s eyes and one’s kidneys. Persons with diabetes also should have their circulation checks and have a regular foot assessment.

PLENARY ACTIVITY: Foot care and footwear is very important in managing diabetic foot disease. What advise can you give to diabetics about foot care and foot wear? 10 minutes

Section 4: Health Committee Support to Community

10. Health Committee and their participation in health

WHO Constitution enshrines the highest attainable standard of health as a fundamental right of every human being. Access to timely, acceptable, and affordable health care of appropriate quality underpins the right to health. Through health promotion interventions, people can improve their health, take control of it and its determinants by addressing the key social, behavioural and structural determinants of health. The right to health means that governments must generate conditions in which everyone can be as healthy as possible. Such conditions range from ensuring availability of health services, healthy and safe working conditions, adequate housing and nutritious food.

In the efforts to realise the community participation in health, NHA (61 of 2003) makes provision for the establishment of health committees at each or group of government health facility. The purpose of health committees is to support the appropriate planning and provision of health services; improve public accountability; promote dialogue and encourage communities to take greater responsibility for their health. They have important oversight, advocacy and social mobilisation roles.

10.1 Health Committee work in Community; Values and Principles within the health system

Sometimes health committees participate in outreach programmes with the health facility staff, they play an important role in mobilising communities to participate in health promotion events. Through meaningful participation and an advocacy role of health committees, health plans and health facilities may increasingly be held accountable for the quality of the care they provide to their patients (including diabetic patients) to improve adherence and good treatment outcomes. The health system is the main stakeholder that is to ensure that values and principles are maintained to achieve good health outcomes.

10.2 Health committees and their perception of quality of care received by vulnerable people in South Africa?

Diabetes is a serious and costly disease which is becoming increasingly common, especially in developing countries, disadvantaged minorities and vulnerable populations. However, there are ways of preventing it and or controlling its progress. For the country struggling with human right ethos, equitable resources, challenges in reaching universal health coverage, and realisation of the right to health, access to good quality health care is not always guaranteed.

When given the principles and values underlying the health system (Dept. of Western Cape Gov. (2013) Health Care 2030), participants who participated in the health committee training in the Cape Metro were asked to reflect on the health services provided in their respective health facilities to give an account of whether the values and principles guaranteed in this document are achieved. Their reflection on the services delivered by their 4 respective health facilities in the Cape Metro, was as follows "insert from the 'training report, 2014 - 2015'

Activity:

Purpose: Exploring access to treatment and management of diabetes

Method: Group

Material: Pen and paper

Procedure: Reflect on the insert below and discuss your observations of the current situation in health facilities in implementing values and principles underlying the health system; has it become worse or better? What were some of your efforts to correct the situation below? What more is needed to address this situation within your powers

Values		Principles	
<p>CARING: When asked to reflect on the values of caring in their health facilities, this is what they had to say:</p>	<p>Yes: Critical patients are attended to first, even elderly people are not made to wait in long queues No: They don't care old people are target of insult if they did not hear being called out No: They make you to wait from 07:00 only to be sent back home at 16:00 without being helped due to shortage</p>	<p>PATIENT-CENTREDNESS Reflecting on the principles of Patient-centredness of their health facilities, their responses were:</p>	<p>Yes: Sometimes they are considerate and advise on things they cannot treat in the clinic, they refer No: Patient is turned away without treatment or being seen, They do not treat babies with temperature or vomiting, If the mother arrives with sick baby in the afternoon and the baby</p>

	<p>of nurses</p> <p>No: The clinic is poorly arranged and small that TB patients and small babies who do not have TB are made to seat and wait in the same waiting area</p>		<p>clinic was in the morning, they will not attend to the sick baby, you have to come back the next day</p> <p>They don't care about people's health needs, they have no time to listen to you</p>
<p>COMPETENCE: Participants were also asked to reflect on the values of competence of health facility, they responded as follows:</p>	<p>No: Nurses, doctors and pharmacies give wrong medication, there is so much negligence, but patients are afraid to take these cases up for fear of victimisation</p> <p>Yes: Some nurses do show competence, they do give you other medication if yours is out of stock,</p> <p>Yes: Some nurses make you to wait for your medication if it is not available, rather than giving something that might not even help</p>	<p>OUTCOME-BASED SERVICES: This is what they had to say about the principles of Outcomes-based services at their health facilities:</p>	<p>No: They don't show that they are outcome based because there is X ray in the clinic and yet so many TB patients and the numbers of infection keep growing by day;</p> <p>No: There is no maternity service, pregnant mothers have to go far, and yet there are so many women of child bearing age in the community</p> <p>Yes: The clinic has a tracking system where TB defaulters and others are traced and brought back into the system, this show they care about health of people</p>
<p>ACCOUNTABILITY : When asked to reflect on the values of accountability by the health facility staff, responses were:</p>	<p>No: Clinic staff is not made to account for their wrong doings e.g. They come late and leave early; they take many tea breaks and on pay day the service is so poor, you see them in town shopping</p> <p>No: if they lose your folder, they shout at people and make them to go home without treatment, make them miss their appointments and their medication</p>	<p>PHC Philosophy: Response to whether the health facility is embracing the principles of PHC philosophy, they responded:</p>	<p>Yes: The current sister in charge embrace community participation</p> <p>No: She is inconsistent, sometimes she embraces community sometimes not – she is sometimes forced to embrace due to fear of local politicians especially the ward councillor, although the ward councillor is not in the health committee</p>

<p><u>INTEGRITY:</u> Values of Integrity in different health facilities were as follows:</p>	<p>No: They have no passion in their work, while they are examining you, they pass bad comments, and sometimes shout at patients labelling them as ‘smelly’ and ‘dirty’ They don’t act professionally, they cannot be trusted</p>	<p><u>DISTRICT HEALTH SERVICE MODEL (DHSM):</u> On principles of DHSM, this is what participants had to say:</p>	<p>Yes: There is a referral point within the area; but the area is large enough to have its hospital like what is happening in other areas such as Khayelitsha Yes: Nurses do refer patients if there is a need, but sometimes ambulances take forever to arrive in cases of emergencies</p>
<p><u>Responsiveness:</u> On Values for Responsiveness at health facility the following responses were noted:</p>	<p>Yes: They are very responsive to the needs especially the vulnerable groups such the aged and children; as well as emergency This is also dependent on staff on duty</p>	<p><u>EQUITY:</u> The principles of Equity in health facilities were:</p>	<p>No: Compared to the number of patients that visits the clinic, the building is small, medication runs short; staff is short; there is not even enough meeting rooms Services such as MOU and X ray are a great need but ignored</p>
<p><u>RESPECT:</u> Values of Respect were:</p>	<p>Yes/No: Respect depends from person to person. Some are worse than others</p>	<p><u>EFFICIENCY:</u> Principles of Efficiency of services were:</p>	<p>They are generally very slow and take lots of breaks, this makes them inefficient But if CHCs are present, you start to see some progress and efficiency; such as less breaks and late coming</p>
		<p><u>Strategic Partnerships</u> Principles were the following</p>	<p>Yes: Both facilities have local partners such as NGOs and local business people who support the facility initiatives.</p>

10.3 The outcry for service delivery: “South Africa averages just over 11 protests a day, out of this 11, 9 protests are peaceful, of which one is disruptive and another is violent”. Social determinants of health are its worst.



Source: <http://mg.co.za/article/2016-06-07-new-stats-show-that-nine-out-of-11-protests-a-day-are-peaceful>

10.4 What Health Committees can do:

Although health committees' work in communities face challenges of resources and the rise in conditions that make community members more vulnerable to ill health, the small steps they take improving the health of the communities should be supported, appreciated and respected. Within the health facilities, they are part of the health facility governance structure that have an oversight function, this function has to be used to improve the health service delivery of chronic illnesses. This is what they can do:

1. Promote awareness in the community, reduce stigma, etc.
2. Ensure the treatment service is respectful of patients. If Patients are treated badly or disrespectfully, they will not come back for treatment
3. Monitor the services – ensure no medicine stock-outs, ensure proper infection control, good diagnostic services with quick results
4. Advocate to address the Social Determinants that increase risk for diabetes – challenge marketing of unhealthy foods, lack of recreational facilities, etc.
5. Deal with complaints in the service in ways that enables service to improve.
6. Negotiate between the community and services
7. Help patients who have stopped treatment or been lost to follow up are restored on treatment.

8. Make sure that Home-based care workers and CHWs are properly supported to visit and assist diabetic patients

9. Ask the clinic for its diabetic statistics; compare to previous months and years; find out if things are improving or getting worse – and what plans are in place to improve treatment outcomes. Review the Chronic Disease Audit.

10.5 Challenging Diabetes Myths in communities

Not everything you hear about diabetes is true. That's why it is important to get the facts straight, so you can make good decisions to better manage your diabetes. Health committees can assist organisation to challenge unfair community beliefs and less effective alternative treatments by raising awareness of these myths through education

QUIZ: Facilitator or one of the participants read out the myths to test beliefs about diabetes; the facts are used to clarify the myths:

1. Myth: "Diabetes is not that big of a deal."

Fact: Diabetes is a big deal, but if you manage it right, you may be able to help delay or even avoid some diabetes-related health complications still to come.

2. Myth: "People who are overweight eventually get diabetes."

Fact: Being overweight is just one risk factor for developing diabetes. There are other factors, such as family history, race or ethnicity, and age. By knowing all of the risk factors, you may better understand your overall risk and what you can do to improve your health.

3. Myth: "Eating too much sugar can cause type 2 diabetes."

Fact: As mentioned above, weight gain is one risk factor for getting diabetes. Taking in too many calories causes an increase in weight. Calories are units of measuring energy; it's a way of describing how much energy your body could get from eating or drinking something; drinking sugary drinks is one way to take in extra calories.

4. Myth: "Having diabetes always leads to bad health problems."

Fact: If you follow your diabetes care plan, you may be able to delay or prevent diabetes-related health problems.

5. Myth: "It's your own fault that you have diabetes."

Fact: Diabetes isn't anyone's fault. No one knows what causes diabetes. Your eating and activity choices can play a role in your blood sugar control. But it's not the whole story.

6. Myth: "Diabetes is contagious."

Fact: No. You can't catch diabetes from someone else like a cold or the flu. But it's important to know that type 2 diabetes can run in families.

7. Myth: "People with diabetes get more colds, flus, and other illnesses."

Fact: Not true. People living with diabetes are no more likely to catch a cold than someone who does not have diabetes. But, those with diabetes are advised to get a flu shot because any illness may make diabetes harder to manage.

8. Myth: "Fruit is good for you, so it is okay to eat as much as you want."

Fact: It is true that fruit is a healthy food. Fruit is full of fibre, vitamins, and minerals. But because fruits contain carbohydrates, which are broken down into sugars by your body, it is important that you eat only as much fruit as stated in your meal plan. Speak with your diabetes care team or dietitian about your meal plan if you're not sure.

10.6 Effective Communication in Diabetes Care

Plenary: Do you find it easy to talk about your concerns just to anyone you meet? How easy is it for you? Who do you trust with your secrets? Why do you trust this person?

Health Committees can encourage diabetics to communicate with their families and friends

Most people have many different relationships throughout life. Family and family friends, school friends and teachers, church friends, sporting friends, work friends and colleagues and many other relationships with people who we are involved with in our world. How do we develop these relationships? How do they start? How do people become friends? Do we need them or do they need us?

11. Coping and Support: What diabetes health clubs or support can do?

Read the following story and list the benefits of this diabetes health club: 30 minutes

The diabetes health club:

We just had our first Diabetes Club lunch! We had been talking about getting together with all the families we know who have children with type 1 diabetes.

Our little circle is growing! Of course we never like to hear of another type 1 diagnosis, but at the same time, it's a great feeling when you can reach out to each other and feel the solidarity and support that comes from associating with people who are in the same situation as you. So, after talking for months about how nice it would be to get together, we finally made the invitations through the health facility and had everyone coming over to our organisation for a lovely (and lively) Saturday lunch. It was a great success!

Everyone helped bring the food, and it turned out delicious and beautiful! It was funny... as we were all assessing the food that we brought for each of our kids with diabetes, we realized what a low-carb meal it was! (low carb meal is a diet that has less carbohydrates e.g. sugary drinks, bread) Even though we didn't specifically assign everyone to bring something low carb, it ended up that way. We had chicken and three vegetables salad, a little bit of 'pap' and fruit juice!

As good as the meal was, the company was by far the best part. It was so fun to sit down together and talk and laugh and exchange stories. The kids had a great time too, running around playing with each other. We ended up having a group of eight adults and 15 kids and teenagers. It was a full house! At the end of the evening, everyone agreed that we should definitely do this on a regular basis. In the future, we'll take turns hosting the lunch at different venues such as a park, so we can continue the tradition.

I'm so glad we finally pulled it together and did this! I think the benefit was as much for the parents as it was for the kids. When it comes to battling a life-long disease like diabetes, there's nothing better than spending time and building relationships with those people just like you... people who really get it!

12. Evaluation

Diabetes is....

Choose the correct options/s	Tick
a. When body cannot produce enough insulin	
b. Cannot utilise the insulin effectively	
c. Blood sugar is high	
d. A chronic disease	

2. Name two common types of diabetes

- a) _____
b) _____

3. Name two signs and symptoms of Type 1 diabetes

- a. _____
b. _____

4. Answer True or False

5. Diabetes can lead to amputation of the leg	True	False
6. Types 2 Diabetes can be cured	True	False
7. Loss of eyesight is common when a person is diabetic	True	False
8. A good diet with sugary drinks can help in diabetes management	True	False
9. obesity is one of the risks for diabetes diseases	True	False
10. Children can also get diabetes	True	False
11. Age is one of the risks for diabetes disease	True	false

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