Indian Diabetes

EDUCATOR JOURNAL

Issue No. 77, August 2021

2015 2016 2017 2018 2019 2020 2021

Longest Running Monthly Journal

FEATURES

INDIAN DIABETES RISK SCORE (IDRS)

Theme: Psychological Wellbeing and Diabetes

With concept of
Diabetes Self Management Education & Support

Glycomet®-GP

In T2DM Patients Across all the Stages

Glycomet®-GP 1
Metformin Hydrochloride 500 mg SR + Glimepiride 1 mg

Glycomet®-GP 2
Metformin Hydrochloride 500 mg SR + Glimepiride 2 mg

In Newly Diagnosed T2DM

Glycomet®-GP 0.5
Metformin Hydrochloride 500 mg SR + Glimepiride 0.5 mg

Glycomet®-GP 0.5 FORTE
Metformin Hydrochloride 1000 mg SR + Glimepiride 0.5 mg

In Uncontrolled Obese T2DM

Glycomet®-GP 1 FORTE
Metformin Hydrochloride 1000 mg SR + Glimepiride 1 mg

Glycomet®-GP 2 FORTE
Metformin Hydrochloride 1000 mg SR + Glimepiride 2 mg

Glycomet®-GP 4 FORTE
Metformin Hydrochloride 1000 mg SR + Glimepiride 4 mg

Glycomet®-GP 3 FORTE
Metformin Hydrochloride 1000 mg SR + Glimepiride 3 mg

In Overweight T2DM

Glycomet®-GP 1/850
Metformin Hydrochloride 850 mg SR + Glimepiride 1 mg

Glycomet®-GP 2/850
Metformin Hydrochloride 850 mg SR + Glimepiride 2 mg

Glycomet®-GP 3/850
Metformin Hydrochloride 850 mg SR + Glimepiride 3 mg

For the use of a Registered Medical Practitioner, Hospital or Laboratory only

Purity outshines... 100% commitment.

Abridged Prescribing Information: COMPOSITION: Glycomet GP 0.5: Each uncoated tablet contains metformin hydrochloride BP (as sustained release) 500 mg and glimepiride USP 0.5 mg. Glycomet GP 1: Each uncoated tablet contains metformin hydrochloride BP (as sustained release) 500 mg and glimepiride USP 1 mg. Glycomet GP 2: Each uncoated tablet contains metformin hydrochloride BP (as sustained release) 500 mg and glimepiride USP 2 mg. Glycomet GP 1/850: Each uncoated tablet contains metformin hydrochloride BP (as sustained release) 850 mg and glimepiride USP 1 mg. Glycomet GP 2/850: Each uncoated tablet contains metformin hydrochloride BP (as sustained release) 850 mg and glimepiride USP 2 mg. Glycomet GP 3/850: Each uncoated tablet contains metformin hydrochloride BP (as sustained release) 850mg and glimepiride USP 3 mg. Glycomet GP 0.5 FORTE: Each uncoated tablet contains metformin hydrochloride BP (as sustained release) 1000 mg and glimepiride USP 0.5 mg. Glycomet GP 1 FORTE: Each uncoated tablet contains metformin hydrochloride BP (as sustained release) 1000 mg and glimepiride USP 1 mg. Glycomet GP 2 FORTE: Each uncoated tablet contains metformin hydrochloride BP (as sustained release) 1000 mg and glimepiride USP 2 mg. Glycomet GP 4 FORTE: Each uncoated tablet contains metformin hydrochloride BP (as sustained release) 1000 mg and glimepiride USP 4 mg. **INDICATIONS:** Glycomet GP is indicated for the management of patients with type 2 diabetes mellitus (T2DM) when diet, exercise and single agent (metformin hydrochloride or glimepiride alone) do not result in adequate glycemic control. **DOSAGE AND ADMINISTRATION:** Dosage of Glycomet GP should be individualized on the basis of effectiveness and tolerability while not exceeding the maximum recommended daily dose of glimepiride 8mg and metformin 2000 mg. Initial dose: 1 tablet of Glycomet GP should be administered once daily during breakfast or the first main meal. Do not crush or chew the tablet. In several cases the tablet may remain intact during transit through the gastrointestinal (GI) tract and will be eliminated in feces as hydrated mass (ghost matrix). Patients should be advised that this is normal as all drug components has already been released during GI transit. **CONTRAINDICATIONS:** In patients hypersensitive to glimepiride, other sulfonylureas, other sulfonamides, metformin or any of the excipients of Glycomet GP; pregnancy and lactation; diabetic ketoacidosis, diabetic pre-coma, in patients with renal failure or renal dysfunction, acute conditions with the potential to alter renal function (dehydration, severe infection, shock, intravascular administration of iodinated contrast agents), acute or chronic disease which may cause tissue hypoxia (myocardial infarction, shock, cardiac/respiratory failure) hepatic insufficiency, acute alcohol intoxication, alcoholism. **WARNINGS:** Keep out of reach of children. Patient should be advised to report promptly exceptional stress situations (e.g. trauma, surgery, febrile infections) blood glucose regulation may deteriorate and a temporary change to insulin may be necessary to maintain good metabolic control. In case of lactic acidosis, patient should be hospitalized immediately. **PRECAUTIONS:** In the initial weeks of treatment, the risk of hypoglycemia may be increased and necessitates especially careful monitoring. Serum creatinine levels should be determined before initiating treatment and regularly thereafter: at least annually in patients with normal renal function. Intravascular contrast studies with iodinated materials can lead to acute alteration of renal function. In patients in whom such study is planned, Glycomet GP should be temporarily discontinued at the time of or prior to the procedure, and withheld for 48 hours subsequent to the procedure and reinstituted only after renal function has been re-evaluated and found to be normal. Use of Glycomet GP should be discontinued 48 hours before any surgical procedure. **ADVERSE REACTIONS:** For glimepiride - Hypoglycaemia; temporary visual impairment; gastrointestinal symptoms like nausea, vomiting, abdominal pain, diarrhoea may occur; increased liver enzymes, cholestasis and jaundice may occur; allergic reactions may occur occasionally. For metformin – Gastrointestinal symptoms like nausea, vomiting, abdominal pain or discomfort may occur.

For full prescribing information please write to: USV Private Limited (formerly USV Limited). Arvind Vithal Gandhi Chowk, B.S.D. Marg, Govandi, Mumbai, Maharashtra – 400088 INDIA | Updated on: 20th March 2019.

Indian Diabetes EDUCATOR JOURNAL

1st time in India
To keep the members of diabetes care team abreast with DSME and DSMS concepts

Indian Diabetes Educator Journal (IDEJ) is the first of its kind in India, longest running monthly diabetes educator journal since April 2015 & continues its endeavour to spread awareness, knowledge and enable healthcare teams to manage diabetes patients and empower their patients for self-care. We continue to keep the members of diabetes care team abreast with concepts of Diabetes Self-Management Education/Support (DSME/S) with reach of > 40,000 doctors and diabetes educators digitally.

Today, the rule of 50% is prevailing in terms of awareness, detection, treatment and control in T2DM. We at team USV support your endeavour to make India diabetes care capital of the world with aspiration to achieve 90-90-90 i.e. 90% of people with diabetes should be made aware & detected, 90% of those detected be treated, and 90% of those treated reach goal.

Diabetes is a complex and challenging condition and often its psychological and emotional impact remains ignored. This month's IDEJ bulletin aims to acknowledge the extent of this problem and recommends a holistic approach to care. It is important to consider both physical and mental wellbeing for improved quality of life of people living with diabetes. We hope this journal will enable diabetes educators and health care professionals to help people with diabetes successfully cope up with mental health issues like depression, anxiety, and diabetes distress.

We sincerely thank our contributors for making this issue delightful reading for our readers. We dedicate this journal to all the healthcare professionals who are working relentlessly towards making "India a Diabetes Care Capital of the World."

Sincere Regards,

Glycomet®-GP

You can contribute your articles, opinion, cases, recipes, experiences or write to us to if you want to subscribe to soft copy of IDEJ every month by sending an e-mail to:

shashikala.b@usv.in or jayesh.dhodi@usv.in

*DSME: Diabetes Self-Management Education, DSMS: Diabetes Self-Management Support

Expert Contributors
of the month

Dr. Philip Finny

MD (Medicine), DNB (Medicine), DNB (Endocrinology)
Senior Consultant Endocrinologist and HOD, Believers Church Medical College and Hospital, Thiruvalla.

Co-author: Mrs. Monica Jacob

Msc, M.Phil (Clinical Psychology)

Article: Diabetes and Psychological Well Being

Dr. Ruchi Satyesh

MBBS, DFM (Family Medicine), CCEBDM (Diabetes)
Consultant Diabetologist, Aditya Clinic, Bengaluru.

Article: Mental Health in the COVID-19 Era

Dr. Aditya G. Hegde

MD, DNB (Endocrinology)
Consultant Endocrinologist, Manipal Hospitals.

Article: Yoga for Mental Health & Diabetes

Dr. Bharat Salve

MBBS, MD, C. Diab, CCMTD
Consultant Diabetologist, Dr. Bharat's Diabetes & Thyroid Clinic.

Article: Counselling Approaches

Dr. Apoorva Hajirnis

MD (General Medicine), DNB (Endocrinology, Diabetes, Metabolism)
Consultant Diabetologist & Endocrinologist, Harmony Centre for Diabetes & Hormonal Disorders

Article: Effect of Antidepressants on Glucose Metabolism

Dr. Piyush Jain

MBBS, MD (General Medicine)
Consultant Physician, P.D.Hinduja Hospital, Khar.

Article: Hypoglycaemia Management

Indian Diabetes
EDUCATOR JOURNAL

Issue No. 77, August 2021

Table of Content

Indian Diabetes Risk Score (IDRS)

The burden of diabetes is increasing rapidly in India and almost half (42%) of the people with diabetes in India are not aware of having diabetes and a large subset of these people are at risk of poor detection. Younger age groups and men are the most vulnerable.

Indian Diabetes Risk Score (IDRS), devised and developed by V Mohan *et al.* at the Madras Diabetes Research Foundation, is a validated and cost-effective tool to identify the risk of diabetes among people. It does so based on four simple parameters–age, family history of diabetes, physical activity and abdominal obesity. A maximum score of 100 is given for these categories combined.

The IDRS has a sensitivity of 72.5% and a specificity of 60.1%. The advantage of IDRS is that it is simple, affordable and can be easily applied for mass screening programmes. Other than diabetes, IDRS may be predictive of metabolic syndrome and cardiovascular disease as three of the factors [age, physical activity and waist circumference] are risk factors for these. IDRS uses two modifiable risk factors (waist circumference and physical inactivity) and two non-modifiable risk factors (age and family history of diabetes). This goes to show that if the modifiable risk factors are altered, the risk score can be considerably reduced.

Individuals with high IDRS, irrespective of their blood glucose status, are ideal for lifestyle modification to bring down the risk.

Look out for the further issues of IDEJ to know your risk to diabetes.

Categorized risk factors	Score
Age (in years)	
<35	0
35-49	20
≥50	30
Abdominal obesity	
Waist circumference female <80 cm, Male <90 cm	0
Female 80-89 cm, Male 90-99 cm	10
Female ≥90 cm, Male ≥100 cm	20

Categorized risk factors	Score
Physical activity	
Vigorous exercise or strenuous at work	0
Moderate exercise at work/home	10
Mild exercise at work/home	20
No exercise and sedentary at work/home	30
Family history	
Two non-diabetic parents	0
Either parent diabetic	10
Both parents' diabetic	20
Total	**100**

Resources:

1. Claypool KT, Chung M, Deonarine A, *et al.* Characteristics of undiagnosed diabetes in men and women under the age of 50 years in the Indian subcontinent: the National Family Health Survey (NFHS-4)/Demographic Health Survey 2015–2016. *BMJ Open Diabetes Research and Care* 2020;8:e000965.
2. Mohan V, Deepa R, Deepa M *et al.* A Simplified Indian Diabetes Risk Score for Screening for Undiagnosed Diabetic Subjects. *J Assoc Physicians India* 2005; 53:755-63.
3. Joshi S. Indian Diabetes Risk Score. *J Assoc Physicians India* 2005. Available at: https://www.japi.org/u284e484/indian-diabetes-risk-score
4. Singh MM, Mangla V, Pangtey R, *et al.* Risk assessment of diabetes using the Indian diabetes risk score: A study on young medical students from Northern India. *Indian J Endocr Metab* 2019; 23:86-90.

Cover Story: Diabetes and Psychological Wellbeing

Dr. Philip Finny

MD (Medicine), DNB (Medicine), DNB (Endocrinology)

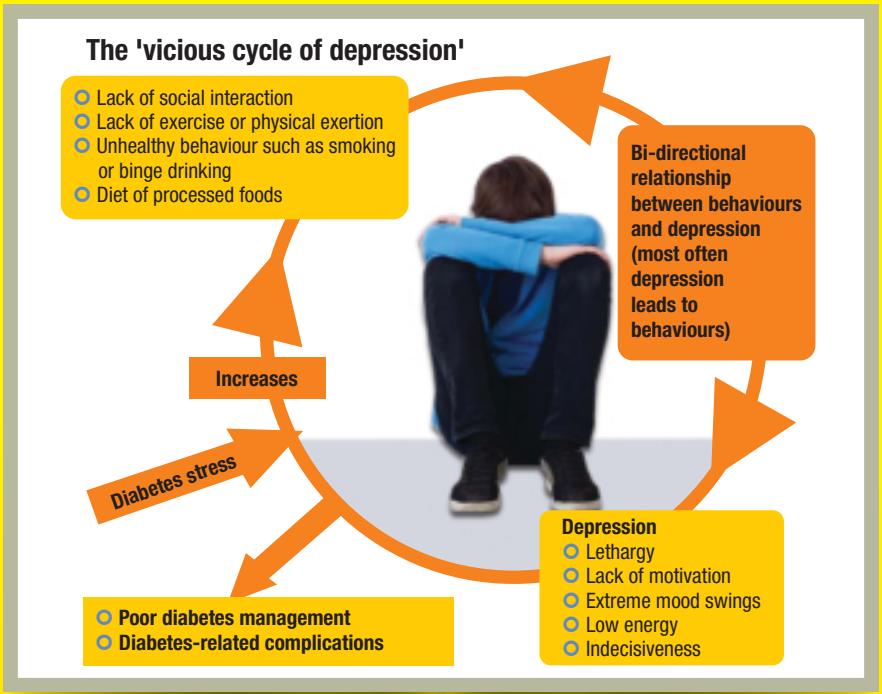
Senior Consultant Endocrinologist and HOD, Believers Church Medical College and Hospital, Thiruvalla.

Co-author: Mrs. Monica Jacob

Msc, M.Phil (Clinical Psychology)

India has 77 million people with diabetes and is expected to increase to 134 million by 2045, as per IDF 2019. Diabetes is a chronic and non-communicable disorder and has a definite psychological impact on the affected individual and their family members. Even though genetic, biological, and environmental factors play a role in the risk and progression of diabetes, behavioural, cognitive, and psychosocial management are also crucial for prevention and improved health outcomes. People with diabetes, live a life that is demanding, constantly challenging, and full of uncertainties. They are constantly concerned about maintaining normal levels of blood glucose, medical complications, episodes of hypoglycaemia, hyperglycaemia, and other diabetes related co-morbidities. As a result, people with diabetes may develop symptoms of anxiety or anxiety disorders. There is evidence to show that the presence of diabetes increases the risk of developing depression and anxiety. Co-morbid depression, anxiety, and diabetes are allied with the worst health outcomes.

Worldwide, the estimation of the prevalence of people with diabetes suffering from depression and anxiety varies by nation. Although data is scarce from developing countries, studies from Asia (including India) report prevalence rates of depression ranging from 17% to 44%, and for anxiety from 4% to 58%. As the prevalence rate of diabetes, as well as depression and anxiety, varies from various parts of India, the exact disease burden is still unclear.



Psychological Aspect of Diabetes

- Diabetes may have a psychological impact on an at-risk individual well before the onset of diabetes (due to increased knowledge of familial risk).
- Concern about the possibility of diabetes in their children.
- Diabetes in children can affect their school life and interactions with peers.
- The need to manage diabetes can add to the psychological demands of meeting the commonly experienced challenges throughout the lifecycle, such as leaving home, marriage, pregnancy, etc.
- Perceived threat to the quality of life.
- Pregnancy and preparing for pregnancy are especially demanding times for women with diabetes.
- A two-way causal link between stress and diabetes control has been suggested whereby life events cause disruption in diabetes control which in turn causes an increase in the number of life events.

Diabetes and common mental health disorders

Stress and anxiety: Stress is part of daily life, from traffic jams to family demands to everyday diabetes care. Stress can be felt as an emotion (fear or anger), as a physical reaction (sweating or a racing heart), or both. During stress, people with diabetes may not take good care of themselves as they normally would, which may cause the blood glucose levels to rise or fall unpredictably. Being stressed for a long time can cause other health problems or make them worse. Anxiety is the feeling of worry, fear, or being on the edge. People with diabetes are 20% more susceptible to have anxiety than those without diabetes at some point in their life. Management of long-term conditions like diabetes is a major source of anxiety.

Diabetes distress: Diabetes distress refers to a range of negative emotional states (discouraged, worried, frustrated) that arise from diabetes morbidity and self-care behaviours that people engage in for better management of their diabetes. To them, it's like diabetes is controlling them instead of the other way around. People with diabetes distress may eventually slip into unhealthy eating habits, stop checking blood glucose levels, and may even skip doctor's appointments. Diabetes distress can look like depression but it's not the same.

Source of Distress	Description
Powerlessness	A state of helplessness in which individuals unsuccessfully try to control several challenging, and often uncontrollable, aspects of diabetes.
Negative social perceptions	Feeling of social mistreatment and discrimination by people and employers.
Physician distress	Feeling of mistrust and incompetence about the physician treating diabetes
Friend/family distress	Feeling of being treated as sick and different by family members and friends.

Source of Distress	Description
Hypoglycaemia distress	Fearful feeling of experiencing sudden episodes of hypoglycaemia such as during driving or sleeping, and fear of failing to notice signs of hypoglycaemia.
Management distress	Feeling distressed over aspects of diabetes self-management and care.
Eating distress	Feeling distressed over unhealthy eating and not exercising, disciplined eating behaviour to support better management of diabetes.

Depression: It is a medical condition that causes feelings of sadness and repeatedly a loss of interest in activities that one used to enjoy. It can impede the way of functioning at work, home and also in taking care of diabetes. People with diabetes are two to three times more prone to have depression than people without diabetes. Only, 25% to 50% of people with diabetes who have depression get diagnosed and treated. Without treatment, depression may get worse, not better.

Suicide and diabetes

People with diabetes have a significantly greater risk of suicidal tendencies, attempted suicide, and completed suicide. The prevalence of suicidal ideation is 16.2% in people living with diabetes which is much higher than the 9.2% found in the general population. There are multiple reasons for suicidal ideation or suicide but amongst all, comorbid depression is a significant risk factor for suicide. Additionally, people with diabetes may be overwhelmed by the other burdens that come along with diabetes like taxing diabetes care, financial strain, poor quality of life, deterioration in interpersonal relationships, negative cognitions such as constant worry or hopelessness, and poor prognosis.

Diabetes, COVID-19 and mental health

People with diabetes have been majorly affected by the current coronavirus (COVID-19) pandemic. There is increased anxiety caused by lack of or irregularity of medical services, fear of being vulnerable to poorer COVID-19 outcomes, and greater mortality rates, which have added to pre-existing diabetes distress and further exacerbated the mental health issues.

Psychological interventions for better management of mental health issues

- Approaches to Regaining Hypoglycemia Awareness
- Identification of Stress Reactivity (as there are high individual variations)
- Stress Management Training- relaxation techniques etc
- Patient Empowerment- providing education, support, encouragement
- Treatment of Sexual Dysfunction (as there is a higher incidence of sexual problems among men with diabetes than among non-diabetic men)

Strategies to support the psychosocial needs of people with diabetes

- **Exercise:** It elevates the mood and helps relax tense muscles.
- **Writing:** Writing thoughts on paper can make one's problems seem more bearable.
- **Relaxation exercises:** Yoga, deep breathing, or tensing and relaxing one muscle at a time.
- **Distraction:** Practicing a hobby, watching a video, or reading books to take your mind off negative thoughts.

- **Meditation or prayer:** Taking care of one's spiritual side.
- **Treatment and therapy:** Taking antidepressant medication and consulting the therapist with use of therapies like behaviour therapy (BT), family therapy, etc., to help solve the problem. Role of a psychologist is to empower the patient to manage their illness and simultaneously maintain their quality of life and psychological well being.
- **Nutrition:** Avoiding processed food and incorporating healthy foods in the diet help to beat stress and anxiety.

People with diabetes have a manifold risk of developing common mental health conditions such as anxiety and depression. A significantly higher proportion of people experience diabetes distress in response to disease burden and their perceived threats of the disorder. Psychological therapies such as BT, counselling strategies, exercise, healthy diet, and yogic practices have proven effective for glycaemic control, improved adherence to medication, self-care behaviours, and psychological well-being.

Resources:

1. Ahmad Bhat N, Prasad Muliyala K, Kumar Chaturvedi S. Psychological aspects of diabetes. *Department of Psychiatry, National Institute of Mental Health and Neurosciences, Bangalore, India.* 2020:90-98.
2. McGill M. Diabetes Education Training Manual Sub-Saharan Africa. *For international diabetes federation Africa region;* 2006:27.
3. Diabetes and Mental Health. Centers for Disease Control and Prevention. Available at https://www.cdc.gov/diabetes/managing/mental-health.html. Published 2021.
4. Depression and diabetes. Diabetes UK. Available at https://www.diabetes.org.uk/guide-to-diabetes/emotions/depression. Published 2021.
5. Rajput R, Gehlawat P, Gehlan D, *et al.* Prevalence and predictors of depression and anxiety in patients of diabetes mellitus in a tertiary care center. *Indian J Endocrinol Metab.* 2016;20(6):746-751. doi:10.4103/2230-8210.192924

Frequently Asked Questions

1. My husband who is 34 years has been diagnosed with diabetes 3 years back. Nowadays he does not talk to me properly and stays by himself. I want to have a baby but he shows no interest in physical intimacy. Could he be depressed?

Ans: Diabetes is a chronic condition and the time and energy spent in managing diabetes can take a toll on emotional health. This may lead to disinterest in physical intimacy. High blood glucose levels can also cause sexual dysfunction or sometimes some medications can also negatively affect sexual function. This often leads to relationship issues, poor self-image, embarrassment and guilt. Hence, you should begin by empathizing and discussing this issue with him. Building intimacy in a relationship requires being open, honest, and brave. Also, talk to the doctor/diabetes educator about this issue. Sharing your problem with the doctor will enable him to understand the issue and he can suggest medication if required. You can also seek help from a counsellor, who can counsel him regarding good management of diabetes without getting stressed or feeling guilty.

2. My grandmother is a known case of diabetes for the last 15 years and well controlled on her regimen. For the last two years, she feels tired and emotionally low. Because of this she is skipping her meals or at times does not take her medication on time and as a result, her HbA1c is going high. How can family help in such a situation?

Ans: Family members can influence the health of people with diabetes positively or negatively. Here are a few ways in which family can support and help her to manage diabetes better.

Daily needs and diabetes management

- Offer healthy food options which should be had by the whole family. Care should be taken that meals are nutritionally balanced to avoid nutritional deficiencies.
- Accompany her for a walk or any other physical activity.
- Assist with blood glucose monitoring and maintaining a log.
- Offer gentle reminders about taking medications on time.
- Identify the signs of hypoglycaemia or hyperglycaemia.
- Help her to check her foot and skin for signs of complications, such as infections, cuts and ulcers.

Social and emotional support

- Be willing to listen to her and offer words of support often.
- Cheer her up and show confidence in her management skills.
- Encourage her to talk to friends and family often.

Support in clinical care

- Keep track of important medical checkups.
- Accompany her for her medical appointments.

3. I am a 47-year-old woman and have diabetes for almost 5 years now. I have terrible mood swings lately and want to know if this is related to menopausal changes or due to diabetes. Is diabetes related to mood swings?

Ans: Menopause does bring about mood swings but they are common in diabetes as well. Mood swings can occur in case of rapid changes in blood glucose levels. You may be irritable when you experience hypoglycaemia or when the blood glucose levels are high (>250 mg/dL). These mood changes are temporary and will stop when the blood glucose levels are back in the target range. Suggest you check your blood glucose levels frequently. Every time you have a mood swing, check your blood glucose level to see whether it is high or low and take corrective action accordingly to keep it in the target range. Another reason for mood changes in diabetes could be diabetes distress. This comes from worry, concern, or feelings of stress associated with the daily regime of managing diabetes. If you think this is the cause of your mood changes, you must take help from your doctor or diabetes educator to overcome this issue.

4. My father has diabetes for the last 10 years. He has always been particular about health and takes his medication on time. Now due to the COVID-19 pandemic, his anxiety levels have gone up a lot and he fears catching the infection and having a severe bout of it due to his diabetes. How do I help him?

Ans: These are testing times, but you need to assure him that good glucose control is important in reducing both, the risk and severity of COVID-19. Now that the vaccine is available, ensure he gets both his doses timely. This will reduce his risk of infection/severity by many folds. Assist him in monitoring his blood glucose levels frequently and staying in touch with his healthcare team through online consultations.

He must continue to follow a healthy diet and exercise routine. Yoga/meditation can be included to relieve stress and anxiety. In order to reduce the risks and complications of COVID-19, the most important factor is to observe standard preventive measures and good glucose control.

Language Matters

Diabetes care is evolving and changing. Health care professionals (HCP's) have a role to play beyond the treatment protocol. To make a difference in positive sense in the overall life of people living with diabetes, they need to build a relationship of trust and respect with them.

The language used by HCP's can have a huge impact on how individuals living with diabetes, and those who care for them, experience their condition and feel about managing it daily. Use of the right words and body language can lower anxiety and stress and can build confidence and a positive attitude which helps to improve self-care. On the other hand, poor communication can be stigmatising, hurtful and can have a negative effect on the mindset which then leads to detrimental clinical outcomes. The language used in the care of those with diabetes can either reinforce negative stereotypes or promote positive stereotypes and so language plays a very important role in diabetes care and it should be such that it encourages positive interactions with people living with diabetes and subsequently positive clinical outcomes.

Below are a few phrases that could be said differently to reduce their negative impact and stigma around diabetes

1. **Wrong phrase- Suffers from diabetes**
   Suffers is a very strong word and since diabetes is a chronic condition, it can make one feel that they have to suffer lifelong

   Try this phrase- Is living with diabetes

2. **Wrong phrase- Patient with Diabetes**
   Patient means someone who is unwell or sick. People with diabetes can live normal lives.

   Try this phrase- Person with Diabetes

3. **Wrong Phrase- For sure you are not following the diet or not taking medication on time.**
   When you say for sure it means you are assuming and blaming. It makes a person feel like a failure.

   Try this phrase- Maybe you are not following the diet.

4. **Wrong phrase- You have to do better.**
   People with diabetes know they have to get their blood glucose levels in control. They need help with how.

   Try this phrase: Let us work together to do better.

5. **Wrong phrase- Look at her/him. She/he is doing so well.**
   Each one is different and comparison can give an inferiority complex.

   Try this phrase- Let's see what we can learn from him/her.

6. **Wrong phrase- She/he is a diabetic.**
   The word diabetic makes one feel inferior and can be stigmatizing

   Try this phrase- He/she has diabetes.

Some other practical approaches to keep in mind while counselling

Smile: It is not always what you say but how you say that also matters. A smile can say more than a thousand words. It instantly makes the person and their family comfortable and they feel at ease to open up before the HCP.

Do Not Fear, I Am Here: Fear tactics have a negative impact. Using fear to motivate a person with diabetes to comply with your advice, leads to anxiety, insecurity and denial. Fear can cause distance and may make that person hide important information from the HCP. Manipulating results, lying, skipping important tests or appointments can become a practice with fear. Try using positive reinforcement instead of fear.

Try Communicating in their Mother Tongue: This instantly breaks the ice and the person feels comfortable communicating their issues.

THE HCP SHOULD ALWAYS SEEK TO BE:

More Empathetic e.g.: It sounds like you are finding it difficult to manage the blood glucose levels.	**Less Stigmatising** e.g.: You are depressed.
More Empowering and Inclusive e.g.: What changes do you feel are required right now?	**Less Shaming and Blaming** e.g.: You are obese and so you are facing difficulties.
More Encouraging and Understanding e.g.: I can see you are giving it your best. Well done!	**Less Disapproving and Threatening** e.g.: This is not the way you take your medication.

Resources:

1. Language Matters India. Baaton Hi Baaton Main 2020. Available at https://www.languagemattersdiabetes.com/the-documents.
2. Language Matters UK. Language and Diabetes 2018. Available at https://www.languagemattersdiabetes.com/the-documents

Myth Buster: Stress Always Causes Diabetes

Fact: Stress is defined as a physiological response to a perceived attack, event, or activity that produces tension or strain. It can be physical or emotionally caused by maladjustment to daily life challenges. Stress is often linked to diabetes but it has no direct role in causing diabetes.

However, stress increases the risk to develop diabetes. Stress can lead to poor lifestyle choices like lack of control on diet, the inclusion of sugary and processed foods, increased alcohol consumption, smoking, lack of exercise etc. These factors along with genetic predisposition can lead to diabetes.

Stress also has major effects on metabolic activities. Energy mobilization is a primary consequence of the fight or flight response. It stimulates the release of hormones such as cortisol, adrenaline and noradrenaline which increase blood glucose levels. If these hormones are constantly elevated in the body, this can precipitate diabetes in a predisposed individual or worsen the glycaemic control in someone who already has diabetes. It has also been associated with weight gain and with potentially obesogenic eating behaviours such as higher energy intake, increased saturated fat and sugar intake. All these factors put together to make one more prone to develop diabetes. Therefore stress management techniques like meditation, yoga, exercise, good quality sleep are essential to prevent diabetes.

Resources:

1. Surwit R, Schneider M, Feinglos M. Stress and Diabetes Mellitus. *Diabetes Care.* 1992;15(10):1413-1422.
2. Richardson A, Arsenault J, Cates S, *et al.* Perceived stress, unhealthy eating behaviors, and severe obesity in low-income women. *Nutr J.* 2015;14(1).
3. Stress: Coping with Everyday Problems. Mental Health America. Available at: https://mhanational.org/stress-coping-everyday-problems. Published 2021.
4. These myths about diabetes can be harmful and misleading. The Indian Express. Available at: https://indianexpress.com/article/lifestyle/health/myths-diabetes-harmful-misleading-6122920/. Published 2021.
5. Is Stress the cause of your Diabetes? Dr Mohan's Diabetes Specialities Centre. https://drmohans.com/is-stress-the-cause-of-your-diabetes/. Published 2018. Accessed June 9,2021

Mental Health in the COVID-19 Era

Dr. Ruchi Satyesh

MBBS, DFM (Family Medicine), CCEBDM (Diabetes)

Consultant Diabetologist, Aditya Clinic, Bengaluru.

The ongoing COVID-19 pandemic has dragged the entire world to its feet leaving people petrified and anxious. COVID-19 is challenging not just medically, but also due to its capacity to affect the financial, mental, emotional wellbeing of individuals across the globe. Though social distancing, quarantine and isolation are the most effective strategies in the prevention and treatment of COVID-19, they themselves increase vulnerability to mental health issues. Distress, uncertainty and unpredictability prevail due to the lack of endpoint of the pandemic, leading to the emergence of psychological issues. In people with diabetes, concerns regarding worsening of glycaemic control, unavailability of appropriate medicines, inaccessibility to health care, acquiring COVID-19 infection and subsequent poorer outcomes increase the risk for mental health issues.

Anxiety, depression, post-traumatic stress disorder (PTSD) are some of the mental illnesses that are on the rise ever since the pandemic started. The prevalence of depression and anxiety symptoms is about two to four times greater in people with diabetes than in the general population. According to Hendrickx H *et.al.* (2005) and Lang UE *et.al.* (2013), metabolic dysregulation influences brain function and disturbances in peripheral glucose regulation and might be associated with depressed mood. Mental health issues in people with diabetes could be exacerbated in a stressful environment, this psychological distress could increase depressive symptoms and worsen glycemic control. Staying indoors due to lockdown has also increased snacking and impacted the exercise schedule thus affecting glycemic control. Eating disorders and sleep disorders are on the rise due to loneliness and anxiety due to social distancing and quarantine.

In adults, children and adolescents with diabetes, depression is found to be related to poorer glycemic control, a range of diabetes complications, increased health care costs, worsened functional disability, re-hospitalization and early mortality. Those with psychological distress at the time of diagnosis have a higher risk of cardiovascular events (1.7-fold) and death (1.8-fold) than those without psychological distress.

In an online survey, 87% of participants with type 2 diabetes from north India were "psychologically affected" and more than one-fourth had decreased sleep. An online-based survey reported that only one-fourth of the participants (28%) were regularly monitoring their blood glucose during lockdown and two-fifth of participants (40%) were anxious about COVID-19 infection. Some studies state that the risk of the suicidal tendency may be increased during the period of social distancing by COVID-19 in people with diabetes.

Individuals affected with COVID-19 with lower education levels or those who thought they did not have any knowledge about the disease were found to get higher scores in depression assessment while more contact with family members was associated with lower depression scores, discovered in a study by Jiang Z *et.al.* (2021). It is worth noting, patient's subjective perception of the severity of their disease, rather than the objective clinical classification, is significantly associated with their mental distress and sleep quality.

Fear of contracting COVID-19 infection often makes people less likely to approach health care for non-emergency issues, especially those pertaining to mental health. Perceived job insecurity, financial problems and unemployment contribute to significant risks for psychiatric disorders and also pose an important barrier in accessing mental healthcare. Rampant use of corticosteroids lately has increased the prevalence of Mucormycosis (black fungus) adding to the fear and panic. People with diabetes are at a higher risk of developing mucormycosis due to compromised immune status and/or the use of steroids during the treatment of COVID-19.

Mental health consequences are likely to be long lasting and may peak later than the actual COVID-19 pandemic. Thus emphasis must be laid on the active and ongoing participation of mental health professionals in policy task forces during this critical period. People having diabetes must be encouraged to communicate and stay socially connected with friends, family and healthcare professionals using digital technology. Video/telephonic consultations with the physician must be regular and it is the need of the hour for the healthcare fraternity to support people with diabetes on the best ways to tackle mental health concerns, develop new healthy routines and manage blood glucose levels during the COVID-19 pandemic.

Resources:

1. Jain A, Bodicherla KP, Raza Q, *et al.* Impact on mental health by "Living in Isolation and Quarantine" during COVID-19 pandemic. *J Family Med Prim Care.* 2020;9(10):5415-5418.
2. Alessi J, de Oliveira GB, Franco DW, *et al.* Mental health in the era of COVID-19: prevalence of psychiatric disorders in a cohort of patients with type 1 and type 2 diabetes during the social distancing. *Diabetol Metab Syndr.* 2020;12:76.
3. Chew BH, Shariff-Ghazali S, Fernandez A. Psychological aspects of diabetes care: Effecting behavioral change in patients. *World J Diabetes.* 2014; 5(6):796-808.
4. Singhai K, Swami MK, Nebhinani N, *et al.* Psychological adaptive difficulties and their management during COVID-19 pandemic in people with diabetes mellitus. *Diabetes Metab Syndr.* 2020;14(6):1603-1605.
5. Jiang Z, Zhu P, Wang L, *et al.* Psychological distress and sleep quality of COVID-19 patients in Wuhan, a lockdown city as the epicenter of COVID-19. *J Psychiatr Res.* 2021;136:595-602.

Yoga for Mental Health & Diabetes

Dr. Aditya G Hegde

MD, DNB (Endocrinology)

Consultant Endocrinologist, Manipal Hospitals.

Yoga practice is a complex intervention with various components, including cleansing processes (kriya), postures (asana), controlled breathing (pranayama), meditation, relaxation, chanting mantras, yogic diet, philosophy, and spirituality.

Many yoga practices have been found to be beneficial in the management of type 2 diabetes, however, their judicious use is suggested after a careful evaluation of a patient's overall health, individual requirements, associated risk factors, and contraindications.

Breathing exercises especially Anulom Vilom Pranayama (alternate nostril breathing) and Kapalbhati Kriya (one-time inhale; exhale 30 to 50 times quickly) are found to be beneficial for people with diabetes.

Anulom Vilom Pranayama (alternate nostril breathing)

It has calming effects on the nervous system and facilitates homeostasis (internal equilibrium in the function of all the systems). Anulom Vilom Pranayama promotes a balanced mind and heals the body from within by eliminating free radicals and toxins. With its positive effects on mental health, Anulom Vilom Pranayama reduces stress levels and helps to combat anxiety and depression.

How to do Anulom Vilom Pranayama?

Sit in any meditative posture either Sukhasana, Padmasana or Vajrasana with back straight. Block the right nostril using the right thumb. Inhale through the left nostril for 2 seconds. Now block both nostrils and hold your breath for 4 seconds. (Cardiac, Blood pressure patients and pregnant women should not hold their breath while doing this pranayama, just keep inhaling and exhaling.) Keep the left nostril blocked and release the right nostril. Exhale through the right nostril for 2 seconds. Now inhale through the right nostril for 2 seconds. Block both the nostrils and hold your breath for 4 seconds. Keep the right nostril blocked and release the left nostril. Exhale for 2 seconds from the left nostril. Block both the nostrils. Hold the breath in suspension for 2 seconds. This completes one single round.

Repeat the cycle again this time inhaling from the right nostril. Repeat for a maximum of 10 rounds. Try to increase the counts of inhalation and exhalation with regular practice. Try to maintain the ratio of equal counts for inhalation, exhalation, and suspension of the breath while holding the breath for double the duration.

The best time to practice Anulom Vilom pranayama is early morning or in the evening or four to five hours after having food.

Kapalbhati (frontal brain purification)

Breathing technique with forceful exhalations and automatic inhalations helps in the production of insulin and controlling glucose levels in the blood. Abdominal pressure created during exhalation improves the efficiency of β-cells of the pancreas. Practising Kapalbhati Pranayama daily for 10-15 minutes helps in relieving stress, tension, and anxiety.

How to do Kapalbhati?

Kapalbhati pranayama should be done early morning on an empty stomach or four to five hours after having food.

Sit in the Padmasana, Sukhasana or Vajrasana pose with spine straight and palms on the knees facing upward (For those who suffer from back issues, this pranayama can be done by resting against the wall or even lying straight on the floor or bed). While maintaining the posture, inhale deeply with both the nostrils, filling both the lungs with air and then force your breath out in shorter intervals. Beginners can practice 20-30 breath pumps going up to 200.

Kapalbhati kriya should always be followed by subtler breathing exercises such as Anulom Vilom. Those who suffer from lower back issues, high blood pressure or headaches should perform this kriya under supervision.

Resources:

1. Raveendran AV, Deshpandae A, Joshi SR. Therapeutic Role of Yoga in Type 2 Diabetes. *Endocrinol Metab (Seoul).* 2018;33(3):307-317.
2. Rathod A. 4 Yoga Poses to Cure Diabetes at Home. Available at https://timesofindia.indiatimes.com/life-style/health-fitness/fitness/4-yoga-poses-for-diabetes/articleshow/44924046.cms. Accessed June 15, 2021
3. Saxena S. Kapalbhati Pranayam: How to Do It, Steps And Benefits. Available at https://food.ndtv.com/health/kapalbhati-pranayam-how-to-do-it-steps-and-benefits-1414298. Accessed June 15, 2021
4. The Yoga Institute. Anulom Vilom Pranayama. Available at https://theyogainstitute.org/anulom-vilom-pranayama/. Accessed June 15, 2021

Effects of Antidepressants on Glucose Metabolism

Dr. Apoorva Hajirnis

MD (General Medicine), DNB (Endocrinology, Diabetes, Metabolism)

Consultant Diabetologist & Endocrinologist, Harmony Centre for Diabetes & Hormonal Disorders

Being diagnosed with diabetes can be a life-changing episode. It seems like a threat to a person's way of life because managing diabetes involves making changes to the daily routine like change in diet, avoiding sugary beverages, restricting alcohol intake, managing blood glucose levels, taking insulin or medications etc. These changes can be psychologically draining and can lead to mental health issues.

Depression is one of the most neglected condition in people with diabetes and is directly linked with low quality of life. One out of every four individuals with type 1 or type 2 diabetes mellitus is found to have clinical depression. It is believed that the diabetes-depression relation is two-way, i.e., the depression can lead to diabetes or vice a versa i.e. diabetes could facilitate the emergence of depression. Correct diabetes management requires awareness of symptoms. Just like taking insulin or medication is essential to ensure blood glucose control, it is important to take action to prevent mental health crises by being aware of one's mental and emotional health. Just like taking care of the body, taking care of the mind is equally important to live a healthy life. When left untreated, mental health conditions like depression and anxiety can make diabetes control worse.

Antidepressants used for patients with diabetes and its effect on glucose and insulin metabolism:

- Selective Serotonin Reuptake Inhibitors (SSRIs) such as fluoxetine, escitalopram and sertraline are the class of drugs most studied and prescribed to treat depression related with diabetes. Studies have shown that short term use of these drugs had beneficial effects over glycemic control reducing the glycated haemoglobin (HbA1c), increasing insulin sensitivity and may improve metabolic control through their positive effect on weight loss, thereby improving insulin resistance. Among the SSRIs, sertraline and escitalopram are preferable since they have a slight inhibitory effect on cytochrome P-450 isoenzymes 3A4 and 2D6, which are responsible for metabolism of many drugs used to treat diabetes and/or other comorbidities. Conversely, fluoxetine inhibits the cytochrome P-450 isoenzymes complex, requiring adjustment of the dose of hypoglycemic agents, in particular insulin. Fluoxetine in adults with diabetes leads to weight loss as well as improvement of fasting glucose and triglycerides. Hence, there is evidence for increased insulin sensitivity due to fluoxetine treatment which is partly independent of weight loss. Similar findings have been shown for sertraline.
- Tricyclic antidepressants (TCAs), including amitriptyline, desipramine, imipramine and nortriptyline among others, are not the first choice for the treatment of depression associated with diabetes as they interfere with glucose control can cause weight gain & the prevalence of metabolic syndrome. Also, long-term use of TCA increases the risk of developing type 2 diabetes.

- Phenelzine, tranylcypromine and moclobemide, inhibit the monoamine oxidase (MAO) and are rarely used to treat depression in people with diabetes as they may also interfere with glycemic control and cause weight gain.
- Bupropion, a special dopamine reuptake inhibitor, appears to reduce both the severity of depression related with diabetes as well as parameters such as body mass index, total fat mass and HbA1c.

Both prevention of diabetes mellitus in depressed individual's and treatment of depression in individual's with diabetes are of considerable clinical significance. Some antidepressants, like fluoxetine, may improve glucose homeostasis. SSRIs are the only class of antidepressants which have confirmed favourable effects on glycaemic control. The effect of other antidepressants, other than SSRIs and TCAs have not been well studied. It remains unclear whether intensified antidepressant treatment may lead to improvements of health behaviours, like diet, physical activity, and nicotine abstinence, or improved glucose regulation. Therefore more studies are needed to confirm the efficacy and safety of these drugs in people with diabetes.

Resources:

1. Zanoveli JM, Morais Hd, Dias IC, *et al.* Depression Associated with Diabetes: From Pathophysiology to Treatment. *Curr Diabetes Rev.* 2016;12(3):165-178.
2. Olguner Eker Ö, Özsoy S, Eker B, *et al.* Metabolic Effects of Antidepressant Treatment. *Noro Psikiyatr Ars.* 2017;54(1):49-56.
3. Bystritsky A, Danial J, Kronemyer D. Interactions between diabetes and anxiety and depression: implications for treatment. *Endocrinol Metab Clin North Am.* 2014;43(1):269-283.
4. Sager JE, Lutz JD, Foti RS, *et al.* Fluoxetine- and norfluoxetine-mediated complex drug-drug interactions: in vitro to in vivo correlation of effects on CYP2D6, CYP2C19, and CYP3A4. *Clin Pharmacol Ther.* 2014;95(6):653-662.
5. Khapre M, Kant R, Sharma D, *et al.* Antidepressant Use and Glycemic Control in Diabetic Population: A Meta-analysis. *Indian J Endocrinol Metab.* 2020;24(4):295-300.
6. Mumoli N, Cocciolo M, Vitale J, *et al.* Diabetes mellitus associated with clomipramine treatment: a retrospective analysis. *Acta Diabetol.* 2014;51(1):167-168.
7. Deuschle M. Effects of antidepressants on glucose metabolism and diabetes mellitus type 2 in adults. *Curr Opin Psychiatry.* 2013;26(1):60-5.

Counselling Approaches

Dr. Bharat Salve

MBBS, MD, C. Diab, CCMTD

Consultant Diabetologist, Dr. Bharat's Diabetes & Thyroid Clinic.

Diabetes is a chronic condition that has a considerable impact on the life of the individual living with it. The primary goal of the health care team should be to impart knowledge, self-confidence, and support for diabetes self-management. Counselling plays a key role and it is well established that counselling improves the quality of life of people with diabetes. The term counselling is defined as a therapy, in which the individual discusses his/her problems freely, shares feelings with the counsellor and the counsellor, in turn, advises or helps the individual to deal with the problems. The psychological counselling services approaches psychological issues from the perspective that psychological health and well-being are affected by one's personal history and current environment. There are several different counselling approaches used by professional counsellors. The four main approaches used by a counsellor for people with diabetes are behavioural therapy, rational emotive behavioural therapy, gestalt therapy, and family therapy. Each of them has a different theory and ideas underpinning it and the counsellor using each approach aims to solve problems and issues in different ways.

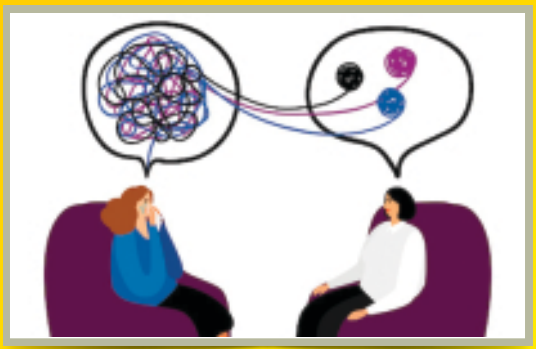
Behavioural Therapy

In behavioural therapy, the counsellor takes the directive role, believes that he/ she is there to help the individual, and has something to offer to help the individual solve a problem. This approach helps the individual change negative thoughts, patterns, beliefs, and behaviour so that they can manage symptoms and enjoy a more productive and less stressful life. It focuses on the behaviour of the individual and aims to assist him/her to modify unwanted behaviour. According to this approach, unwanted behaviour is an undesired response to something or someone in a person's environment. Using this approach, a counsellor would identify the unwanted behaviour with the individual and together they would work to change or adapt the behaviour. Once the unwanted behaviour is identified, the individual and counsellor continue the process by drawing up an action plan of realistic, attainable goals.

The counsellor can change the behaviour by applying the following:

- **Self-monitoring:** Can ask patients to keep written records of what they eat (when? what? how much? etc.)
- **Controlling the stimuli of eating:** Asking to eat on a small plate, avoid the route which has a sweet shop, etc.
- **Advise gradual changes:** Patients should be advised to start with small steps first (e.g., start walking for 15 minutes/day, to begin with then gradually increase the duration pace)
- **Recognize positive changes:** When patients make small changes, recognize them with verbal appreciation, rewards, group appreciations, etc.

Rational Emotive Behaviour Therapy (REBT)



It is based on the concept that emotions and behaviours result from cognitive processes and that it is possible for the individual to modify such processes by achieving different ways of feeling and behaviour. It mainly focuses on helping individuals change irrational beliefs. This approach helps the individual replace illogical and unrealistic ideas with more realistic and adaptive ones through direct intervention and confrontation. Using this approach, the counsellors will first help the individual to identify the irrational thought, belief, and feelings which lead to psychological distress. Once the underlying feelings are identified, the next step is to challenge the mistaken beliefs, thoughts, or feelings which the counsellor does by disputing. Apart from identifying and disputing irrational beliefs, the counsellor and individual work together to target the emotional responses that accompany problematic thoughts. The individual is also encouraged to do meditation, journaling, and guided imagery to change unwanted behaviours.

The counsellor can help an individual identify the disturbing irrational thoughts/ beliefs and replace them with rational ones:

Irrational thought	Rational thought
I can't believe I ate a bowl of ice cream. My diet plan does not allow it.	I did make a mistake but I am not totally off the track. I will not do it again.
I've been on a diet for a month and not lost any weight so I am giving up.	It has taken me many years to put on all that weight, so I will take time to lose it. As long as my diet is proper, I am on the right track.

Gestalt Therapy

It focuses on the whole of the individual's experience, including feelings, thoughts, and actions. This individual gains self-awareness by analyzing behaviour and body language and talking about bottled-up feelings. This approach works by teaching individuals how to define what is truly being experienced rather than what is merely an interpretation of the events. Those undergoing gestalt therapy will explore all of their thoughts, feelings, behaviours, beliefs, and values to develop an awareness of how they present themselves and respond to events in their environment which will give them the opportunity to identify choices, patterns of behaviour, and obstacles that are impacting their health and wellbeing, and preventing them from reaching

their full potential. The unfolding of this therapeutic process will typically involve a range of expressive techniques and creative experiments developed in collaboration between counsellor and patient. This will be appropriate for the individual and their specific problems. The most common methods used are role-playing, dialogue, dreams, an empty chair, etc.

Example: Individuals who feel they don't have any self-control can think of work obligations where they have deprived themselves of TV viewing for weeks on end.

If the individual thinks that he cannot live a normal life with diabetes henceforth, he/she can be counselled to think about the present and the strategies for coping, e.g., spirituality, leisure activities, family time.

Family therapy

Family is the basic social unit and functions like organizations. The nature of family relationships, including social support (e.g., providing love, advice, and care) and strain (e.g., arguments, being critical, making too many demands), can influence well-being through psychosocial, behavioural, and physiological pathways. Usually, the vulnerable person in the family shows the symptoms of the unhealthy family balance while others carry on doing well. Family therapy is a kind of psychotherapy that works with families and couples. It aids families or individuals within a family to understand and improve the way family members interact or behave with each other and resolve conflicts. The counsellor focuses on what goes between people that is, on how patterns of interaction within the family may foster or maintain the problem. A counsellor can approach family members to assist the individual in coping. Family members can play a supportive role, help the individual take corrective steps, understand the individual's feelings, and reinforce small gains in behaviour.

The approaches described are practical and can be implemented within the context of standard diabetes care visits. They can work effectively with individuals with diabetes, as well as individuals without diabetes who are struggling with living a healthy lifestyle. Skill is required to use these approaches, but these skills can be acquired by any diabetes care provider who is appropriately motivated. Asking questions and helping individual's to work through their issues can empower diabetes care providers to improve outcomes with relatively little consumption of resources.

Resources:

1. Kabir, Syed Muhammad. Chapter 6: Counseling approaches.In: Kabir, Syed Muhammad, Essentials to Counseling.1st ed. Abosar Prokashana Sangstha, Banglabazar, 2017:117-204. Available at: https://www.researchgate.net/publication/325844296_COUNSELING_APPROACHES.
2. Kabir, Syed Muhammad. Chapter 1:Introduction to Counseling.In: Kabir, Syed Muhammad, Essentials to Counseling.1st ed. Abosar Prokashana Sangstha, Banglabazar, 2017:21-24. Available at: https://www.researchgate.net/publication/325844365_INTRODUCTION_TO_COUNSELING.
3. Thomas PA, Liu H, and Umberson D. Family Relationships and Well-Being, *Innovation in Aging.* 2017;1(3): igx025.
4. Froggatt, Wayne. (2005). Rational Emotive Behaviour Therapy. Available at: https://www.researchgate.net/publication/ 237435902_ Rational_ Emotive_Behaviour_Therapy
5. S Palaian, A Chhetri, M Prabhu, *et al.* Role Of Pharmacist In Counseling Diabetes Patients. *The Internet Journal of Pharmacology.* 2004;4(1).

Hypoglycaemia Management

Dr. Piyush Jain

MBBS, MD (General Medicine)

Consultant Physician, P.D. Hinduja Hospital, Khar.

"Hypoglycaemia" is a medical condition in which the blood glucose level is lower than normal i.e <70 mg/dL People with diabetes who take insulin, sulfonylureas or glinides have an increased risk of hypoglycaemia compared to other classes of drugs. The consequences of hypoglycaemia can be dangerous and need to be corrected immediately.

Some people with diabetes develop severe anxiety about hypoglycaemic episodes. Every individual may show a different reaction to hypoglycaemia and therefore it is important to understand hypoglycaemia symptoms and educate the individual on its management.

Reasons for hypoglycaemia

- Skipping a meal or eating too little after taking the medication/insulin
- Insulin/Drug overdose
- More physical activity than usual
- Hot shower immediately after insulin injection
- Consumption of alcohol

Symptoms of hypoglycaemia

The symptoms vary from mild, moderate to severe hypoglycaemia. Mild symptoms can be treated by the individual himself; however moderate and severe hypoglycaemia may require medical attention. Some common symptoms are shakiness, irritability, confusion, tachycardia, sweating, dizziness, hunger, nausea, headache, blurred vision etc. Severe hypoglycaemia can progress to loss of consciousness, seizures, coma, or even death in some cases.

Management of hypoglycaemia

Hypoglycaemia treatment requires a fast acting form of carbohydrate like glucose which will instantly raise the blood glucose levels. The use of glucagon is indicated for the treatment of severe hypoglycaemia in people unable to or not willing to consume carbohydrates by mouth.

Management of mild or moderate hypoglycaemia

- Consume 15g of glucose (3 teaspoons of sugar /glucose, ½ cup of fruit juice, 4 glucose tablets), wait for 15 minutes and then check blood glucose levels.
- If the blood glucose levels are still <70 mg/dL repeat the treatment.
- When the blood glucose level is >70 mg/dL have a snack/meal to avoid reoccurrence of hypoglycaemia like fruit with nuts, paneer/egg wrap etc

*Never correct hypoglycaemia with ice creams, chocolates, Indian sweets or desserts. These foods are high in fat content and will take time to raise blood glucose levels.

Resources:

1. Chawla R, Madhu SV, Makkar BM, *et al.* RSSDI-ESI Clinical Practice Recommendations for the Management of Type 2 Diabetes Mellitus [published correction appears in Indian J Endocrinol Metab. 2020;24(4):376]. *Indian J Endocrinol Metab.* 2020;24(1):1-122.
2. Salis S. (2020) Diet in Diabetes Simplified (2nd ed.). Chennai: Notion Press

Super Food: Walnuts

Walnuts are power packed nuts that help lower cholesterol, blood pressure, boost brain power, improve sleep quality, help cope with stress and reduce depression symptoms.

Nutritional facts (walnuts)

- Has an antioxidant effect
- Good source of omega 3 fats
- Source of protein and dietary fibre
- Provides micronutrients like manganese and copper

Health benefits

- **Beneficial in Type 2 Diabetes:** The consumption of walnuts improves endothelial function in adults with type 2 diabetes. Walnuts are also a good source of PUFA, protein and dietary fibre, which help to control blood glucose levels and lower the risk of developing type-2 diabetes.
- **Reduces cardiovascular risk:** Studies have observed a reduction of cardiovascular disease risk factors with walnut consumption. A walnut-enriched diet can decrease total and LDL cholesterol, increase HDL cholesterol and reduce blood pressure, inflammation, and plaque formation.
- **Improves cognitive function and brain health:** Studies have shown that a diet enriched with walnuts showed a promising effect in brain disorders like Parkinson's disease, depression, and epilepsy.
- **Has an antioxidant effect:** The components of walnuts, such as flavonoids, ellagic acid, gamma tocopherol, and melatonin, are known to have antioxidant and free radical scavenging properties.
- **Has an anti-inflammatory effect:** Walnuts contain a high amount of n-3 α-linolenic acid (ALA), which has a highly potent anti-inflammatory effect.
- **Beneficial in weight control:** Walnuts have favourable effect on weight control as they provide satiety.

How to consume?

Have a handful of raw, unroasted, unsalted walnuts a day.

Walnuts can be added to oatmeal, porridges, soups and assorted trail mixes.

Recommended intake

According to ICMR-: Indian council of medical research; NIN-National Institute of Nutrition recent report on 'What India Eats' the recommendation for nuts and seeds are 30 g/ day.

Resources:

1. Delaviz H, Mohammadi J, Ghalamfarsa G, *et al.* A Review Study on Phytochemistry and Pharmacology Applications of Juglans Regia Plant. *Pharmacogn Rev.* 2017;11(22):145-152.
2. Chauhan A, Chauhan V. Beneficial Effects of Walnuts on Cognition and Brain Health. *Nutrients.* 2020;12(2):550. Published 2020 Feb 20.
3. Rock CL, Flatt SW, Barkai HS, *et al.* Walnut consumption in a weight reduction intervention: effects on body weight, biological measures, blood pressure and satiety. *Nutr J.* 2017;16(1):76. Published 2017 Dec 4.
4. Aleix Sala-Vila, Cinta Valls-Pedret, Sujatha Rajaram, *et al.* Effect of a 2-year diet intervention with walnuts on cognitive decline. The Walnuts And Healthy Aging (WAHA) study: a randomized controlled trial, *The American Journal of Clinical Nutrition.*2020;111(3):590-600.
5. ICMR-NIN. What India Eats. Available at https://www.nin.res.in/nutrition2020/what_india_eats.pdf

Recipe: Broccoli Soup

Serves: 2

Ingredients	Amounts
Broccoli (chopped)	1 cup
Onion (chopped)	¼ cup
Milk	½ cup
Walnuts (chopped)	½ cup
Oil	2 tsp
Black pepper powder	To taste
Salt	To taste
*1 cup	250 ml
1 tablespoon	15 ml
1 teaspoon	5 ml

Method

1. Heat oil in a non-stick pan, add chopped onions and sauté on a medium flame for one minute.
2. Add the chopped broccoli and sauté again for another two to three minutes.
3. Add 1 cup of water and cook for five more minutes or until the broccoli is cooked well.
4. Allow it to cool and blend in a mixer to make a smooth puree.
5. Transfer the puree into a deep pan, add milk, salt and black pepper powder. Mix well and bring to a boil.
6. Garnish with chopped walnuts and serve hot!

Dia-Game

1. **_____is a medical illness that causes feelings of sadness and repeatedly a loss of interest in activities that one used to enjoy.**

   a) Diabetes b) Hyperglycemia c) Depression

2. **Hypoglycaemia is a medical condition in which blood glucose level is lower than normal i.e. _____.**

   a) <54 mg/dL b) <70 mg/dL c) <90 mg/dL

3. **_____ is a power packed nut which helps to lower cholesterol, blood pressure, boost brain power, improve sleep quality, help to cope with stress and reduce depression.**

   a) Pistachio b) Walnut c) Cashewnut

4. **After correcting hypoglycaemia with 15 g of sugar one should wait for how many minutes?**

   a)10 minutes b) 15 minutes c) 20 minutes

5. **REBT stands for _____.**

   a) Rational Emotive Behavior Therapy b) Ration Emotion Behavior Therapy
   c) Rationally emotive Behavior Therapy

6. **Which is the class of drugs most studied and prescribed to treat depression in diabetes?**

   a) SSRI's b) TCA's c) MAOI's

7. **Breathing technique in Yoga with forceful exhalations and automatic inhalations is called _____.**

   a) Anulom Vilom b) Kapalbhati c) Vajrasana

8. **The healthcare professional should always seek to be more _____.**

   a) Threatening b) Blaming c) Empowering

ANSWER KEY

1(c), 2(b), 3(b), 4(b), 5(a), 6(a), 7(b), 8(c)

Patient Speaks

I am a 51-year-old woman. I was diagnosed with diabetes 8 years back. My HbA1c was initially under control but last 2 years it kept rising slowly even though I was taking my medications on time and eating only selected foods. The doctor started insulin therapy for me. That dejected me further and I felt like a failure. I did not feel like talking to anyone and would avoid friends and family gatherings. I felt as if my life was ruined. My husband noticed these changes in my mood and behaviour and took me to my Diabetes educator (DE).

My DE asked me a few questions about how I feel. She listened to me carefully and said that what I was experiencing was called diabetes distress which is common in people having long standing diabetes. I was being too harsh on myself by over restricting foods. She gave me few practical tips on balancing my carbohydrate intake and portion control so that I could eat everything in moderation. The DE explained to me that starting insulin therapy is not a failure from my side but a better way to keep my glucose levels in the target range so that I can enjoy more flexibility and better quality of life. She told me it helps to prevent diabetes related complications by helping to stabilize glucose control. She also explained to me how to avoid and manage hypoglycaemia which I was worried about. After speaking to her I realized that my life was not as bad and in fact, if I continued on a healthy routine I could achieve a lot by keeping my blood glucose in the target range. Another thing my DE told me was to talk to family, close friends and seek support. She told me communicating how one feels to a loved one helps to reduce stress and anxiety. She also emphasized that when one cannot manage their own emotions one should take help from a mental health care professional as one would go to a doctor if sick. She told me about diabetes support groups also and I enrolled in one. I realized I was not alone in this journey and decided that instead of giving up I would now take charge of my health and help others to do so too. Getting advice and counselling from my DE helped me a lot to feel much more optimistic towards life and sure enough, my HbA1c came back to normal and I am able to maintain my blood glucose in the target range.

Glycomet®-GP

In T2DM Patients Across all the Stages

Glycomet®-GP 1
Metformin Hydrochloride 500 mg SR + Glimepiride 1 mg

Glycomet®-GP 2
Metformin Hydrochloride 500 mg SR + Glimepiride 2 mg

In Newly Diagnosed T2DM

Glycomet®-GP 0.5
Metformin Hydrochloride 500 mg SR + Glimepiride 0.5 mg

Glycomet®-GP 0.5 FORTE
Metformin Hydrochloride 1000 mg SR + Glimepiride 0.5 mg

In Uncontrolled Obese T2DM

Glycomet®-GP 1 FORTE
Metformin Hydrochloride 1000 mg SR + Glimepiride 1 mg

Glycomet®-GP 2 FORTE
Metformin Hydrochloride 1000 mg SR + Glimepiride 2 mg

Glycomet®-GP 4 FORTE
Metformin Hydrochloride 1000 mg SR + Glimepiride 4 mg

Glycomet®-GP 3 FORTE
Metformin Hydrochloride 1000 mg SR + Glimepiride 3 mg

In Overweight T2DM

Glycomet®-GP 1/850
Metformin Hydrochloride 850 mg SR + Glimepiride 1 mg

Glycomet®-GP 2/850
Metformin Hydrochloride 850 mg SR + Glimepiride 2 mg

Glycomet®-GP 3/850
Metformin Hydrochloride 850 mg SR + Glimepiride 3 mg

For the use of a Registered Medical Practitioner, Hospital or Laboratory only

Purity outshines... 100% commitment.

Abridged Prescribing Information: COMPOSITION: Glycomet GP 0.5: Each uncoated tablet contains metformin hydrochloride BP (as sustained release) 500 mg and glimepiride USP 0.5 mg. Glycomet GP 1: Each uncoated tablet contains metformin hydrochloride BP (as sustained release) 500 mg and glimepiride USP 1 mg. Glycomet GP 2: Each uncoated tablet contains metformin hydrochloride BP (as sustained release) 500 mg and glimepiride USP 2 mg. Glycomet GP 1/850: Each uncoated tablet contains metformin hydrochloride BP (as sustained release) 850 mg and glimepiride USP 1 mg. Glycomet GP 2/850: Each uncoated tablet contains metformin hydrochloride BP (as sustained release) 850 mg and glimepiride USP 2 mg. Glycomet GP 3/850: Each uncoated tablet contains metformin hydrochloride BP (as sustained release) 850mg and glimepiride USP 3 mg. Glycomet GP 0.5 FORTE: Each uncoated tablet contains metformin hydrochloride BP (as sustained release) 1000 mg and glimepiride USP 0.5 mg. Glycomet GP 1 FORTE: Each uncoated tablet contains metformin hydrochloride BP (as sustained release) 1000 mg and glimepiride USP 1 mg. Glycomet GP 2 FORTE: Each uncoated tablet contains metformin hydrochloride BP (as sustained release) 1000 mg and glimepiride USP 2 mg. Glycomet GP 4 FORTE: Each uncoated tablet contains metformin hydrochloride BP (as sustained release) 1000 mg and glimepiride USP 4 mg. **INDICATIONS:** Glycomet GP is indicated for the management of patients with type 2 diabetes mellitus (T2DM) when diet, exercise and single agent (metformin hydrochloride or glimepiride alone) do not result in adequate glycemic control. **DOSAGE AND ADMINISTRATION:** Dosage of Glycomet GP should be individualized on the basis of effectiveness and tolerability while not exceeding the maximum recommended daily dose of glimepiride 8mg and metformin 2000 mg. Initial dose: 1 tablet of Glycomet GP should be administered once daily during breakfast or the first main meal. Do not crush or chew the tablet. In several cases the tablet may remain intact during transit through the gastrointestinal (GI) tract and will be eliminated in feces as hydrated mass (ghost matrix). Patients should be advised that this is normal as all drug components has already been released during GI transit. **CONTRAINDICATIONS:** In patients hypersensitive to glimepiride, other sulfonylureas, other sulfonamides, metformin or any of the excipients of Glycomet GP; pregnancy and lactation; diabetic ketoacidosis, diabetic pre-coma, in patients with renal failure or renal dysfunction, acute conditions with the potential to alter renal function (dehydration, severe infection, shock, intravascular administration of iodinated contrast agents), acute or chronic disease which may cause tissue hypoxia (myocardial infarction, shock, cardiac/respiratory failure) hepatic insufficiency, acute alcohol intoxication, alcoholism. **WARNINGS:** Keep out of reach of children. Patient should be advised to report promptly exceptional stress situations (e.g. trauma, surgery, febrile infections) blood glucose regulation may deteriorate and a temporary change to insulin may be necessary to maintain good metabolic control. In case of lactic acidosis, patient should be hospitalized immediately. **PRECAUTIONS:** In the initial weeks of treatment, the risk of hypoglycemia may be increased and necessitates especially careful monitoring. Serum creatinine levels should be determined before initiating treatment and regularly thereafter: at least annually in patients with normal renal function. Intravascular contrast studies with iodinated materials can lead to acute alteration of renal function. In patients in whom such study is planned, Glycomet GP should be temporarily discontinued at the time of or prior to the procedure, and withheld for 48 hours subsequent to the procedure and reinstituted only after renal function has been re-evaluated and found to be normal. Use of Glycomet GP should be discontinued 48 hours before any surgical procedure. **ADVERSE REACTIONS:** For glimepiride - Hypoglycaemia; temporary visual impairment; gastrointestinal symptoms like nausea, vomiting, abdominal pain, diarrhoea may occur; increased liver enzymes, cholestasis and jaundice may occur; allergic reactions may occur occasionally. For metformin – Gastrointestinal symptoms like nausea, vomiting, abdominal pain or discomfort may occur.

For full prescribing information please write to: USV Private Limited (formerly USV Limited). Arvind Vithal Gandhi Chowk, B.S.D. Marg, Govandi, Mumbai, Maharashtra – 400088 INDIA | Updated on: 20th March 2019.