TEAM 443

Psychiatry

MED 443

King Saud University

Reviewed

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Coping with Diabetes Mellitus in Adolescence

Objective

- To understand the psychological impact of DM on adolescence.
- To know how to help adolescents to adapt to DM.
- Difficulties among adolescent with DM type 1
- Sources of stressors for them.
- Types of coping.
- How to help.

This lecture was presented by:

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Colour index:

Red: Important
Grey: Extra info & explanation.
Pink: only in girl's slides.
Green: Doctor's notes.
Blue: Only in boy's slides.

Any future corrections will be in the editing file, so please check it frequently.

Introduction

concept	definition	Male slide
Diabetes Mellitus	A metabolic disease affecting multiple systems & psycho-social functioning.	insulin dependent DM (type I)
Stress	A psycho-social stimulus that triggers emotions & anticipatory responses (e.g., fear, anger).	
Adolescence المراهقة	• A critical developmental stage with many psycho- physiological changes. • Adolescence can be a difficult period of life. The need to become more **independent**, to create an **identity** and to adopt a new lifestyle can influence the way that adolescents with diabetes cope with their disease. • The freedom to makes one's own choices about lifestyle is seen as important in this age group. Taking increasing responsibility for diabetes self-care is part of the process	
Coping	A psycho-physiological process to adapt to stress. The process of managing stressors (internal and external) Coping of adolescents with chronic illness focus on **coping with illness it self**	

The types of coping in adolescents :	Additive (main) effect model which focus on well-being regardless amount of stress.
	Interactive model : coping moderates the impact of stressor to varying degree depends on severity of stressor.

How to help :

- Parent support.
- Coping with Sx of Depression.
- Cognitive coping (understand how the insulin help to grow stronger)
- Behavioral coping (minimize the experience of being deprived from popular food ..)

Psychosocial Factors and Diabetes Mellitus

A metabolic disease affecting multiple systems & psycho-social functioning.

- Polydipsia/polyurea (social embarrassment/sleep disturbance). embarrassing for younger adults more than elderly.
- Hypo-Hyper glycemia.the associated symptoms e.g: Shivering , fainting make them feel outstanding around others which is stressful for them .
- Diabetic physical complications. E.g : Renal problem , visual impairment .. etc
- Worries about blood sugar level & physical health.
- Others e.g : Body image
- Stress sometimes changes a latent case of diabetes into an active one.
- Psychological factors may precipitate the onset of diabetes and influence the timing of symptoms presentation
- It has been established that there is an excess of life events in the few months preceding the onset of the condition particularly in older children & adolescents.
- Psychological dysfunction may cause reoccurrence of acute diabetic episode specially in adolescents.
- Life experience and emotional factors can have an important bearing on the course of diabetes

Sources of stress in DM :

- The illness it self.
- Illness-specific stressor such as :
  - Disease-related pain.
  - Medical procedures.
  - Stress related to admission
  - Extreme self control (diet)

COPING WITH DM IN ADOLESCENCE

Adolescence

A **critical developmental stage** between childhood and adulthood characterized by major changes (physical, sexual, and psycho-social). صورة المرض و أعراضه تختلف حسب الفئة العمرية

	Early Adolescence (10/11-13/14 yrs)	Mild Adolescence (14-17/ 16 yrs)	Late Adolescence (17 and older / 18-21 yes)
Features	-Am I normal	-Independence -Self image	-Future oriented -Intimacy -Career goals
Physical Development	-delayed Body growth -Pre-puberty hormonal changes	-Quick growth -Puberty hormonal changes	-Completed
Psychological Development	-Curiosity (explore ways of being independent) -Thinking: Black/white تفكيره يكون ذو حّدين مافية حلول وسطى و نقاش -Self-conscious about appearance/? being judged by others.e.g : Taking insulin injections in family gatherings.	-Self-image/confidence. -Emotional turmoil/ Oversensitivity/Impulsivity -Thinking: more abstract. -Independence/Peer. -pressure. -Sexual identity & interest+/- romantic relationships(calf love). Stressed about the effect of the disease on sexual function.	-Frontal lobe functions بسبب نوبات الإغماء المفاجئة -(decision making, impulse control, and being able to consider multiple options and consequences). -Identity formation (core beliefs/values) : أنا أضعف من غيري، هل أنا مختلف ؟

Male slide

Psychological morbidity appears to be from 10 – 30 % with chronic illnesses

Diabetes mellitus is co-morbid with - Depression -Anxiety disorders.

Adjustment disorders are common with (depressed/anxious mood).

Research has found that those who felt they understood their purpose in life, faced less fear and despair in the final weeks of their lives than those who had not.

Disease	Pathophysiological (biological changes) objectively recognized by physicians (e.g.,Covid-19 infection).
Illness	Patient's subjective perception of his disease (e.g., symptom complex & understanding Covid-19 infection).
Illness behavior	Patient's behavior to adapt to his disease. A- Adaptive (e.g., seeking medical help & adherence to invx/Rx). B- Non-adaptive (e.g., avoiding medical help, refusing medication). More with young adults
Sick Role	Socially expected/required role of ill person e.g., exemptions from some responsibilities, the right to seek care and help from others. It becomes non-adaptive If it is exaggerated or continued after the disease is over.

Male slide

Other co-morbid behavioral & psychological problems:

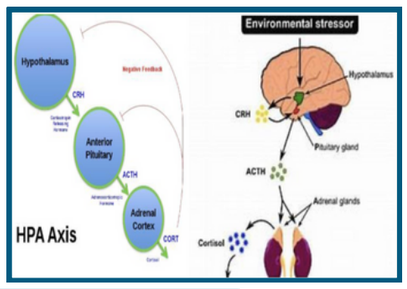
- Anger
- Social withdrawal
- Low self esteem
- Adjustment disorders
- Acute organic brain syndrome
- Behavioral problems
- Eating disorders

Male slide

The HPA axis

hypothalamic pituitary axis

- A neuro-endocrine bi-directional communication (activation/inhibition) to maintain body homeostasis (CNS/ANS, CVS,Metabolic S., Immune S. & others).
- Several neurotransmitters are important in regulating the HPA axis, especially NE,DA,5HT.
- Some medications regulate HPA axis function (e.g., SSRIs).
- The HPA axis is involved in the neurobiology of many psychiatric disorders : (e.g., anxiety, depression, sleep disorder, phobias, IBS, some skin diseases, others).
- Normal cortisol release: Diurnal variation; the level peaks in the early morning (around 8 am) and reaches its lowest level at about 4 hours after the onset of sleep (2-4 am). High level of cortisol reduces the sensitivity of cells towards insulin leading to an increase inglucose leve



Stress & Activation of HPA axis

Physical/Direct Activation

Any physical stimulus that threatens body homeostasis (e.g., hypoglycemia, dehydration, insomnia/hypersomnia, infection) directly stimulates the hypothalamic paraventricular nucleus.

Psychological/Indirect Activation

Stress: E.g., fear, rage indirectly stimulates the hypothalamic paraventricular nucleus through the **limbic system** signals to release cortisol.
Prolonged stress results in a high overall level of daily cortisol release but with lower-than-normal levels of cortisol in the morning and higher-than-normal levels in the evening.

Hypothalamus

- Sleep (suprachiasmatic nucleus: light reduces melatonin in pineal gland whereas darkness enhances melatonin secretion).
- Higher control of hormones: Catecholamines-vasopressin-oxytocin-ACTH-TSH-FSH-LH-Prolactin and growth hormones .
- Food regulation: Feeding/hunger center, located in the lateral side of hypothalamus, which is chronically active and its activity is transiently inhibited by the activity in the satiety center (in the ventro-medial side), after the ingestion of food.
- Water regulation (superolateral part of hypothalamus)/ vasopressin=antidiuretic hormone.
- Temperature :

Anti-rising center in the anterior hypothalamus, mediates the parasympathetic system to increase body heat loss,thus reducing body temperature.
Anti-drop center in the posterior hypothalamus mediates the sympathetic system to reduce body heat loss.

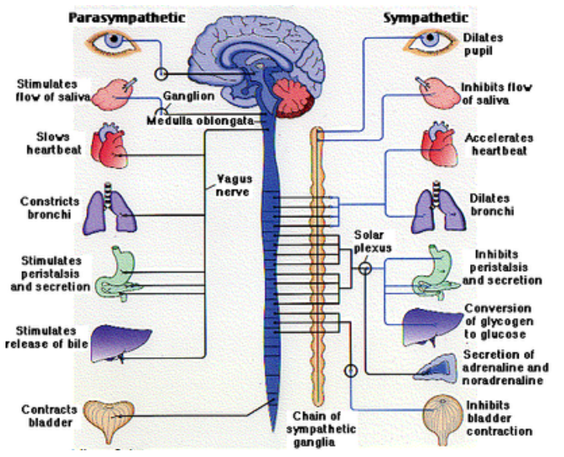
- Higher control of the autonomic nervous system :

Parasympathetic (by anterior hypothalamus).
Sympathetic (by posterior hypothalamus).

Autonomic Nervous System

Affected by the physical & psychological stress .

Systems	
Parasympathetic	It slows the heart rate, constricts the pupils, increases peristalsis of the intestine and glandular activities (increasing secretions), opens the sphincters and contracts the bladder wall & facilitates erection.
Sympathetic	βI stimulation : Acceleration in the heart rate and increase in the myocardial contractility. β2 stimulation: Vasodilatation of skeletal muscles and coronary arteries, bronchodilatation, and relaxation of uterus, intestines and bladder. α receptor stimulation : Constriction of the arterioles of the skin and intestine, mydriasis, piloerection, sweating, ejaculation, closure of the sphincters and reduction of salivary glands secretion.



Normal psychological adjustment to serious illnesses

Male slide

(Proposed by Elizabeth Kubler-Ross for impending death)

Widely encountered, begin when the patient is first aware of his/her serious illness.
The order & duration may be different for each person & not everyone goes through each stage.

الدكتور يقول الجدول هذا هو خلاصة وزبدة المحاضرة (old and 442)

1-Shock/Denial	"I feel fine" يتصف بالعناد والعنف مرحلة خطيره لانه ممكن يرفض الدواء	Doctor shopping searching for one who supports their position (dx was wrong) يبحثون عن دكاتره هرباً من التشخيص الصحيح
2-Anger	"Why me & now?	Anger towards medical staff, relatives, self, others, and even God/Allah (not fair). Expect difficulty when caring for the patient due to misplaced feelings of rage. It is essential for doctors not to take this anger personally
3-Bargaining	"I will give/ do anything for a reformed lifestyle"	It is a subconscious negotiation with God/Allah for reversing the condition & restoring healthy life. يستخدم فيه المريض أسلوب المفاوضة : ماما ماراح أزعلك أبدا إذا ما عطيتيني الانسولين
4-Despair	"I feel hopeless inevitable Disease" الانسحاب والانطوائية	Moderate self-limited depressive features. It is an anceptable stage that should be processed. It is not recommended to attempt to cheer up an individual who is in this stage. Can we give him antidepressants
5-Acceptance	"I better give up resisting and prepare for it" Depression	This is not a "happy" stage; it is usually void of feelings. It takes a while to reach this stage and a person who fights until the end will not reach it.

What factors affect types of adjustment ?

- Personal strength & interpersonal skills.
- Family influences on coping
- Feelings and attitudes about how they cope
- Child temperament
- Peer group influences on coping
- Quality of life and how this affected coping
- Personal meaning of illness
- Fear for the future and how this affected coping.

There are negative impact of every day stressors on health , immune and circulatory system

Other effects :

- Children & adolescents with diabetes show an increased rate of learning problems.
- Cognitive impairment on intelligence scales have been noticed.
- School absence.
- The majority of school personnel has inadequate understanding of diabetes and its management.

Psychosocial Aspects of Management

- Most of youngsters with diabetes and their families will cope well with the social and psychological stresses imposed by the illness.
- Education
- When to refer the patient to a child and adolescent psychiatrist?
- Managing psychiatric disorders
- School counseling
- Individual psychotherapy
- Family counseling

Adolescence DM: Psycho-social Impact

Male slide

1

- Self-image
- Self-confidence
- Dependence /Independence
- Neurocognitive Acute/chronic poor attention from stress
- Emotions (Shame/fear/anger)
- Adjustment Ability
- Social contact Peer Relationships
- Eating habits Behavior
- Others

When Adolescents with DM do not ask for help. Search for the common reasons

2

- Severe illness/ disability
- Lack of support systems
- Overdependence
- Parental involvement
- Immaturity
- Dependent Behavior
- Psychopathology
- Others

Difficulties that they face / Obstacles with family/caregiver

3

- Emotional dependency / Dependency on family.
- Heightened perception of disease severity
- Parenting styles / Parents can't differentiate between Common anxiety Sx of temperament AND hypoglycemia.
- Lack of trust in caregivers
- Excessive need for control
- Isolation from peers.
- Physical limitations.
- Diet restriction.
- Frequent blood testing & injections.

Coping with DM in adolescence

Male slide

Coping of adolescents with chronic illness focuses on coping with the illness itself

Patient	Supportive	To facilitate acceptance & overcome shock, denial, anger, fear, shame, sadness and guilt.
	Cognitive-Behavioral	Cognitive: Identify & correct faulty thoughts about self, life, DM (features/etiology/ Rx/ investigations/…). Behavioral: • Encourage & reinforce +ve behavior (e.g., diet control/ exercise). • Minimize the experience of being deprived from popular food).
Family	Education to identify early features of DM; increased thirst, going to the toilet frequently, extreme tiredness, weight loss, and/or blurred vision. Parent support & modification of hopes, dreams, and plans for the future.	
Teachers	Education to support & obtain needs and resources at school/college.	
Medical Staff	Education to support & obtain basic needs and resources (e.g., insurance, legal issues).	

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سبحان اللّه وبحمده، سبحان اللّه العظيم

لا إله إلا اللّه وحده لا شريك له، له الملك
وله الحمد وهو على كل شيء قدير

سبحان اللّه وبحمده عدد خلقه ورضا
نفسه وزنة عرشه ومداد كلماته
٣ مرات

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