Biohacks And Diabetes: Obstacle Or Opportunity

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Abstract

This communication describes the concept of biohacking, and relates it to primary diabetes care. Biohacking can be defined as the use of self-developed, informal non evidence based means of managing and monitoring disease, or promoting health. In the context of diabetes care, biohacks may be related to lifestyle, diet, physical activity or spiritual management, pharmacological therapy, or monitoring strategies. These may be an obstacle, as well as an opportunity, for better health care. Empathetic listening and education is the key to incorporating biohacks as allies in the fight against diabetes.

Keywords: Biohacks, person centred care, patient education, quinary prevention, therapeutic patient education.

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Introduction

The word 'hack' has traditionally been used a verb, denoting the act of cutting something. In recent years, however, it has found popularity as a noun. A hack can be defined as a self-created or 'do-it-yourself'(DIY) means of achieving an outcome that would otherwise be accomplished using (expensive), conventional tools.

Earlier applied to technical sciences, the concept of hacking has gained ground in health and disease management as well.[1,2] The term 'biohack' refers to informal, unapproved, non-evidence-based methods of preventing, managing and/or monitoring disease, or facilitating, fostering and/or proactively promoting health. The synonyms closest to hacking include the English term 'improvisation', and the expressive Urdu "jugaad".

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Relevance To Health Care

Biohacking is especially common in chronic disease management.[3,4] It is practiced by most persons living with chronic disease, at some time in their lives. Primary care diabetes is one aspect of health care where biohacking is extremely common. Table lists various examples of biohacking that are frequently encountered in South Asia. These relate to overall lifestyle, nutrition physical activity and stress management, as well as management and monitoring of glycaemia. The use of alternative and complementary medication, under the supervision of a qualified professional of the relevant school of medicine, will not be considered a biohack.

Relevance To Diabetes Care

Biohacking may harm the patient, as it may not be based on scientific principles, and may conflict with prescribed modes of management.[5] Examples include substituting jaggery for sugar, or margarine for butter. Extreme forms of biohacking, such as low carbohydrate diets, ketodiets and intermittent fasting are also encountered.

Persons living with type 1 diabetes are sometimes able to create their "artificial pancreas" or closed loop pumps, using DIY technology. Others, who have learnt the concept of hypoglycaemia awareness, or hyperglycaemia recognition, may begin using symptomatology, instead of glucose estimation, to monitor their well being and disease progression. Some individuals resort to breaking unscored tablets, or strips for urinalysis, perhaps with the aim of saving in cost, without realizing that this adversely affects the precision of drug delivery or analyte estimation.

Other biohacks may be neutral or harmless. Drinking fenugreek water or coriander water, for example, may be considered a harmless hack. However, if this is consumed with L-thyroxine or semaglutide, it will reduce the absorption of these drugs, and lead to suboptimal therapeutic response.

At times, biohacks can be helpful. Apart from providing a sense of self-esteem, self-confidence and security to the individual, they promote a sense of 'ownership' or being in charge of one's health. Some hacks, which require assistance from family members or other caregivers, create a feeling of togetherness and bonding. Thus,

Table: Biohacks In Diabetes Care.

Non pharmacological management
• Substituting jaggery for sugar
• Laughter therapy
• Clapping hands in lieu of exercise
• Faith healing
• Drinking turmeric milk
Pharmacological management
• Breaking unscored tablets
• Using pen insulin with syringes
• Filling empty pens or cartridges with insulin from vials
• Reusing insulin needles
• Injecting into lipohypertrophic sites to reduce pain
Monitoring
• Cutting urinalysis strips in half
• Monitoring health based in symptoms alone

biohacking helps improve psychological and social health.

Obstacle To Opportunity

Biohacks, therefore, should be viewed both as an obstacle and opportunity for health care. A patient listening is required whenever a patient shares their biohack.[6] Sincere acknowledgement and appreciation of the effort made towards better health and empathic explanation of the strengths and shortcomings of the hack, delivered without being judgmental or sarcastic, help in building an ideal patient-provider relationship. Instead of absolutely negating or condemning a biohack, it may be more appropriate to modify it, e.g., reduce the amount of jaggery, or offer alternatives, e.g., substitute salt with other spices such as cumin seeds.

It goes without saying that life-threatening or life altering hacks, such as stopping insulin in type 1 diabetes, or discontinuing drugs for blood pressure, glucose, lipid or weight management, must be actively discouraged. The concept of quinary prevention must be followed at all times,[7] If done in a pleasant and positive manner, this will enhance adherence to therapy, as well as improve cooperation and satisfaction with the diabetes care team.

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