



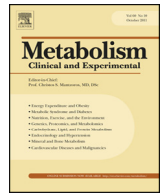
Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.



Contents lists available at ScienceDirect

Metabolism Clinical and Experimental

journal homepage: www.metabolismjournal.com

Letter to the Editor: Mental Health and Psychological Distress in People with Diabetes during COVID-19



Keywords:

COVID-19 coronavirus
diabetes
people with diabetes
mental health
psychological distress
emotional wellbeing

Dear Sir,

Since diabetes is a chronic condition, heightened concern in people with diabetes and their families is understandable. As early as the 17th century, a doctor hypothesized a link between diabetes and low mood and since then researches have suggested that people with diabetes have higher morbidity, prevalence of getting infected and mental health conditions. People with diabetes, if infected, would be harder to manage because of fluctuation of glucose level. COVID-19 has positively affected the diabetes supplies and medications including insulin. Physicians are not available and refills through prescriptions are difficult adding a stressor for people with diabetes. Currently there is insubstantial research on the correlation of diabetes and COVID-19. Nonetheless, high risk or not of coronavirus, the impact of COVID-19 on the mental health of these individuals is highly significant.

Additionally, research has shown a higher relationship between diabetes and variety of mental health issue which could easily be exacerbated in stressful environment. Particular diabetes related psychological distress (negative emotions and burden of self-management), and psychological insulin resistance (refusal to initiate insulin therapy under certain conditions) could aggravate during the psychological stress in the wake of COVID-19 and related behavior-modification suggestions [1] [2]. Presence of diabetes-specific psychosocial issues, psychological distress and stressful environment could decrease quality of life and thus self-management which could lead to un-adherence to quarantine recommendations which resultantly compromise mental health of people with diabetes [2]. Psychological distress could increase depressive symptoms and could cause adverse diabetes outcomes [3]. New psychological distress as a product of COVID-19 with connection of diabetes-specific psychological distress could further augment: a) emotional distress of dependence on self-management (including self-care, medication, COVID-19 behavior modification and hygiene practices), and b) psychosocial difficulties at personal and interpersonal level (new demand of maintaining social-distancing and self-isolation). Diabetes-specific distress is associated with higher glycosylated hemoglobin (A1C levels), higher diastolic blood pressure (BP) and increased low-density lipoprotein cholesterol (LDL-C) levels; and risk factors of are higher body mass index, lower self-efficacy, low social support, poorer diet quality, living alone (incidentally present in COVID-19 lockdown outcome) [4] [5].

Psychological insulin resistance is a common reaction in individuals who report anxiety and fear of health-related concerns [6]. Perceived health anxiety and perceived fear of an illness could have impact on ability to self-manage. Consequently, stress, deficient social support and negative emotions towards any new change in life can impact on glycemic control [7]. COVID-19 related psychological issues in individuals with diabetes require addressing the psychosocial factors, and mental health factors that impact on individuals and their families. Adverse life experience and trauma in these individuals increases the risk as the author developed diabetes after being exposed to a negative life event. Posttraumatic stress symptoms and sub-syndromal traumatic stress can increase the developing diabetes 40% and 20% respectively (as author speak from experience as well) [8]. Individuals with diabetes have higher anxiety (one-third), depressive symptoms, panic attacks, and impaired functioning especially when another stressor is added [9]. Clinical features such as sweating, anxiety, tachycardia and confusion are similar in both hypoglycemic episodes and anxiety induced by a stressful life event. And as up to 45% case of mental health issues and diabetes-related psychological distress in individuals with diabetes goes undetected so the management of their mental health and physical health amidst of COVID-19 pandemic outbreak is even more needed [10] [11]. It is suggested that people with diabetes stay hydrated, and constantly check BGs and check for ketones in the event of high BGs. Above all, sound mental health, psychosocial functioning and emotional wellbeing is necessary for individuals with diabetes during COVID-19 pandemic outbreak.

Declaration of Competing Interest

None.

References

- [1] Hagger V, Hendrieckx C, Sturt J, et al. Diabetes distress among adolescents with type 1 diabetes: A systematic review. *Curr Diab Rep* 2016;16:9.
- [2] Polonsky WH, Hajos TR, Dain MP, et al. Are patients with type 2 diabetes reluctant to start insulin therapy? An examination of the scope and underpinnings of psychological insulin resistance in a large, international population. *Curr Med Res Opin* 2011;27:1169–74.
- [3] Gonzalez JS, Fisher L, Polonsky WH. Depression in diabetes: Have we been missing something important? *Diabetes Care* 2011;34:236–9.
- [4] Winchester RJ, Williams JS, Wolfman TE, et al. Depressive symptoms, serious psychological distress, diabetes distress and cardiovascular risk factor control in patients with type 2 diabetes. *J Diabetes Complications* 2016;30:312–7.
- [5] Strandberg RB, Graue M, Wentzel-Larsen T, et al. Longitudinal relationship between diabetes-specific emotional distress and follow-up HbA_{1c} in adults with type 1 diabetes mellitus. *Diabet Med* 2015;32:1304–10.
- [6] Bahrmann A, Abel A, Zeyfang A, et al. Psychological insulin resistance in geriatric patients with diabetes mellitus. *Patient Educ Couns* 2014;94:417–22.
- [7] Luyckx K, Seiffge-Krenke I, Hampson SE. Glycemic control, coping, and internalizing and externalizing symptoms in adolescents with type 1 diabetes: A cross-lagged longitudinal approach. *Diabetes Care* 2010;33:1424–9.
- [8] Kelly SJ, Ismail M. Stress and type 2 diabetes: A review of how stress contributes to the development of type 2 diabetes. *Annu Rev Public Health* 2015;36:441–62.
- [9] Hasan SS, Clavarino AM, Mamun AA, et al. Anxiety symptoms and the risk of diabetes mellitus in Australian women: Evidence from 21-year follow-up. *Public Health* 2016;130:21–8.

- [10] Li C, Ford ES, Zhao G, Balluz LS, Berry JT, Mokdad AH. Undertreatment of mental health problems in adults with diagnosed diabetes and serious psychological distress: the behavioral risk factor surveillance system, 2007. *Diabetes Care* 2010;33:1061–4.
- [11] W Rana, S Mukhtar, S Mukhtar Mental health of medical workers in Pakistan during the pandemic COVID-19 outbreak *Asian J. Psychiatr.*, 51 (2020), 102080 10.1016/j.ajp.2020.102080

Sonia Mukhtar
University of Management and Technology, Lahore, Pakistan
Corresponding author
E-mail address: sonia.mukhtar12@gmail.com

Sakina Mukhtar
Independent Researcher, Lahore, Pakistan