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Depression and diabetes in India: perspectives and recommendations

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Abstract

As diabetes prevalence shifts from affluent to lower-income groups in India, focus on depression in diabetes will become essential. This paper describes four perspectives through which depression and diabetes should be understood in the Indian context. We consider (1) how rapid socio-economic and demographic changes contribute to increased co-occurring diabetes and depression; (2) how social, cultural and economic factors in the Indian context contribute to depression and therefore play an important role in diabetes care; (3) biological and behavioural pathways between depression and diabetes; and (4) the role of health systems in depression, diabetes and their overlap. We conclude with recommendations for future research and policy on this topic in India.

Keywords

developing countries; diabetes; healthcare delivery; psychology; psychosocial stressors

Introduction

The Type 2 diabetes epidemic is projected to escalate in India in the next two decades [1]. To date, 13% of Indians are estimated to have Type 2 diabetes [2], with a higher prevalence in urban (15.5%) compared with rural areas (2.7%) [3]. Depression has been identified as both cause and consequence of diabetes and a growing body of research emphasizes bidirectionality between the two conditions [4–8]. Although limited research is available on this relationship in India, a recent population-based study in urban India found 20% of people with newly diagnosed diabetes had co-occurring depression [9]. Depression among people with diabetes within urban clinical populations is estimated at approximately 41% [10]. This relationship requires attention because depression is associated with hyperglycaemia, which, in turn, can increase the likelihood of diabetes-related complications and consequently mortality [11]. This commentary discusses current research on co-

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Competing interests

Nothing to declare.

occurring depression and diabetes in India and proposes four perspectives through which this relationship can be understood.

Macro-social perspective

The macro-social perspective examines how larger political-economic and social processes may contribute to the disproportionate burden and distribution of chronic disease in India. We argue that rapid socio-economic and demographic changes may contribute to increased incidence and prevalence of diabetes and depression in two fundamental ways. First, over the past decade significant changes in quality, quantity and source of food consumption and physical activity patterns have facilitated the escalation of overweight, obesity and diabetes in India. Rapidly improving socio-economic status has been associated with increased diabetes, particularly among the affluent [12]. Yet, emerging data reveal a rapid reversal of the socio-economic gradient of diabetes within India, as incidence and prevalence of diabetes is escalating among middle- and low-income groups [13,14]. Thus, we are beginning to see a shift in the distribution of diabetes that represents a shift similarly observed in high-income countries, such as the USA, where much of the diabetes burden afflicts the socially disadvantaged. Second, extremely high rates of depression (15%) exist in urban Indian populations [15] and are observed largely among people who are older, of lower socio-economic status, are women, and among those who are divorced or widowed [15]. Social factors associated with modernization and migration also have had a major impact on social integration within Indian society [16], and social isolation is intimately linked with mental distress and, indirectly, diabetes. Emphasis on understanding the relationship between economic, social and psychological factors among people with diabetes is salient as we observe a reversal of the socio-economic gradient of diabetes within India. A multifactorial approach will be critical as diabetes shifts to a less affluent population that faces higher rates of depression and poorer access to diabetes care.

Micro-social processes

The micro-social perspective examines how social, cultural and economic factors shape individual-level experiences, which contribute to a person's increased risk of chronic disease. Epidemiologists and anthropologists increasingly have argued that specific forms of social and emotional distress among people with diabetes requires further attention and that depression throughout one's life may increase risk of diabetes [17,18]. Yet, limited data reveal such associations in the Indian context. A small body of Indian research suggests that mental distress may stem from social, cultural and economic spheres and play an important role in diabetes self-care [19–24]. An important distinction, and one that has been made elsewhere [25], is that Indian women more frequently experience co-morbid depression compared with men [20,21] and that social roles shape the ways in which women manage their diabetes [19]. As found in other relational social contexts, such as Mexican populations, women tend to put their family's needs before their diabetes self-care [19] and report feeling stress, guilt and depression with regard to their disease [20]. Men were more likely to rely on their wives with regard to their diet, but were less likely to seek their support with regard to emotional support or medicine adherence [23]. This might be one reason that men seem to have fewer complications and more ease in accepting their diabetes

[20,21]. Other social and cultural aspects of diabetes that require investigation are the beliefs that people hold surrounding diabetes onset, such as belief that karma, God and fate are contributors to health and illness, and traditional understanding of self-care and healing [26]. These cultural beliefs may shape the way in which people understand and experience their diabetes, and therefore function as a critical aspect in diabetes self-care and social understandings of the disease more generally. Thus, we believe that further studies exploring individual-level associations between social stress and depression among people with diabetes can reveal how social and psychological distress may contribute to diabetes in India.

Biological processes

Two hypotheses explain the bidirectional relationship of depression and diabetes. The first hypothesis is that diabetes itself is stressful and may contribute to depression [8]. An established literature shows significant associations between depression and poor glycaemic control and diabetes complications [11]. The second hypothesis is that people with depression may have increased risk for diabetes via (1) neurohormonal processes associated with counter-regulatory release and action of stress hormones, (2) alterations in glucose transport function and (3) increased immuno-inflammatory activation [6,8]. These physiological responses contribute to insulin resistance and β islet cell dysfunction, which ultimately lead to diabetes. Additionally, depression may lead to unhealthy behaviours associated with diabetes, including overeating, physical inactivity, smoking, alcohol consumption and poor medicine adherence, and these behaviours may be mediated by antidepressant medication [6]. Although much of this research has been examined in developed countries, we may assume that similar psychophysiological processes affect Indian populations. Future studies should evaluate variance of such processes in South Asia where culture change, depression and biological risk for diabetes are escalating.

The impact of health systems

Depression care for people with diabetes is critical; a strong association exists between poor depression care and diabetes complications [11]. Despite the fact that India was among the first of the developing countries to initiate a National Mental Health Programme, the programme remains underfunded and faces challenges with implementation of mental health care and promotion activities [27]. Limited investment in mental health care may reflect the general belief in India that depression is a social problem [28]. It also may be attributable to competing health priorities, such as the financial burdens associated with combating tuberculosis and polio. Further, lack of healthcare infrastructure and human resources impede comprehensive mental health care [29]. However, strong evidence of and increasing political mobility for shifting mental healthcare tasks to community health workers may improve health outcomes [29,30]. This approach has been illustrated for both diabetes [31] and depression [32], but none of these task-shifting approaches to combating chronic disease have been scaled up within the public health sector [1]. Scaling up mental health services for people with diabetes can improve not only diabetes self-care and reduce diabetes complications, but also such focus may improve overall compliance to diabetes treatment. Thus, we argue that current lack of mental health care in the Indian healthcare system

presents a major barrier to diabetes care, especially with regard to the implications of untreated depression among people with diabetes. As commitment to mental health within the Indian healthcare system continues to grow, then, integration of mental health into diabetes care and management must be a focus.

Where do we go from here?

We have discussed four areas where depression and diabetes present a bidirectional relationship to emphasize the multidimensional approach needed to address the co-morbidity in India. We have argued that escalating rates of diabetes cannot be dissociated from political-economic and social structures in the Indian context and that micro-social stresses can manifest in depression and related unhealthy behaviours. We discussed the fact that the bidirectional association extends beyond social and behavioural factors and is indeed biological. Finally, we suggested that a health systems approach that incorporates mental health care into diabetes care is necessary to combat these co-occurring and interactive epidemics.

Future studies on diabetes and depression in India must attend to these four areas to provide a deeper understanding of the co-morbidity within the Indian context. First, epidemiological evaluation of the clustering of depression and diabetes within specific populations is necessary. A recent population-based study provides evidence that depression and diabetes are indeed co-occurring [9], but clinical studies of the co-morbidity are limited and inconsistent. Second, more in-depth analysis of social and cultural factors that mediate individual experiences with depression and diabetes are needed. For instance, more research is needed to understand how cultural beliefs about diabetes and depression may function as a barrier to or facilitator of diabetes care. Research examining everyday experiences of people with diabetes is also needed to understand how social, economic and psychological factors may contribute to increasing diabetes onset and complications among socially disadvantaged Indian populations. Third, investigation into the biological mechanisms that involve depression among Indian populations may provide unique insight into the escalation of diabetes in India. Fourth, consideration of depression care in clinical diabetes care is imperative as diabetes escalates within the general population. A task-shifting approach should play a central role in this effort. By understanding and attending to these four levels of interaction between depression and diabetes, there is potential to reduce the diabetes burden in India.

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