

## Original Article

# Research productivity regarding psychosocial aspects of diabetes from India

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### ABSTRACT

**Introduction:** psychosocial factors play an important role in chronic ailments like diabetes. Unfortunately, there is limited research in the area of diabetes and the published literature is scanty from India. In this study, we assessed the research productivity on psychosocial aspects of diabetes from India. **Materials and Methods:** the online database of PUBMED was searched using the search terms 'psychosocial', 'diabetes' in any field and 'India' in the author affiliation field. The available articles were studied further for analyzing the research productivity. **Results:** the number of available articles dealing with the psychosocial aspect of diabetes are 16 that constitute only 0.08% of the total papers in PUBMED. The articles were mostly in the form of original articles (13 out of 16) and the remaining three constituted a case report, review, and medical hypothesis. The majority of the articles originated from Delhi, Chennai, and Visakhapatnam. **Conclusion:** the research productivity from India is lacking in the psychosocial aspects of diabetes. The imbalance is marked as we have the highest disease burden and urgent measures are required to cover the gaps in the research.

**Key words:** Diabetes, India, psychosocial factors, research productivity

## INTRODUCTION

Diabetes mellitus has assumed epidemic proportions in the Indian subcontinent. The rise in incidence is mostly due to changing lifestyle that includes more urbanization, aging population, reduced physical activity, and rise in obesity.<sup>[1]</sup> The underlying etiopathogenesis of type 2 diabetes is expanding from the triumvirate to octet and dirty dozen.<sup>[2]</sup> The management of diabetes leaves a lot to be achieved despite the existence of various guidelines on the subject from national and international academic bodies. In a chronic life style disease like diabetes with varied etiology, there is a need to look beyond the boundaries of biological model and understand the new models of health care.

A biopsychosocial model is a general model explaining the contribution of biological, psychological, and social factors in the context of a disease.<sup>[3]</sup> The biological component explains the cause of illness due to altered body function. The psychological component looks at the psychological morbidity such as denial of illness, adjustment disorders, and emotional turmoil. The social part studies the effects of various social parameters (socioeconomic status, culture, poverty, and religion) on the disease and health. This biopsychosocial model is essential in achieving the patient centered health care in the context of diabetes.<sup>[4]</sup> The diabetes research activities are concentrated on the biological component of the disease neglecting the psychosocial factors. There is no formal assessment of the research productivity regarding the psychosocial aspects of diabetes from our country.

## MATERIALS AND METHODS

A PUBMED-based quantitative analysis was carried out for this study covering the entire duration of available records in the PUBMED database. Pubmed comprises over 22 million citations for biomedical literature from MEDLINE,

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life science journals, and online books. PUBMED citations and abstracts include the fields of biomedicine and health, covering portions of the life sciences, behavioral sciences, chemical sciences, and bioengineering.

The details of the study are given in the flow diagram as shown in Figure 1. The search was carried out using the advanced search option available on the website. The procedure adopted in obtaining the research output in the psychosocial aspects of diabetes is described as follows. Firstly, a search was undertaken of the online PUBMED database (<http://www.ncbi.nlm.nih.gov/pubmed>, accessed 12<sup>th</sup> May 2013) using the search terms 'psychosocial' and 'diabetes' in any field. The search was initially conducted without any limits or filters of date range, subject areas (Life Sciences and Health Sciences), and types of the documents. Second, these terms were used in conjunction with the name of India in the Author Affiliation field. Third, all the identified papers using the original PUBMED search were screened by reading the Title and Abstract. The papers not satisfying the search criteria were excluded from the final analysis. Fourth, the studies selected for inclusion at this stage were further screened for suitability by reading the papers. This was done independently by two authors (KVSHK and KA), with the final group of articles to be included in the study determined after consensus.

The articles published were analyzed for the type of articles and the clinical setting from where the work originated as shown in Table 1. Research work carried out by the individuals and institutions is published mostly as original articles and brief reports. The same data is published under correspondence in few journals due to space constraints. For the purpose of this study, all available articles were analyzed and are grouped as original articles, review articles including guidelines, case reports

and miscellaneous. The institution of the first author is taken as the place and department of study for the articles involving multiple authors from different institutes and departments. The data were obtained independently by two authors (KVSHK and RNV) and discrepancy if any was resolved by accessing the information jointly from the database.

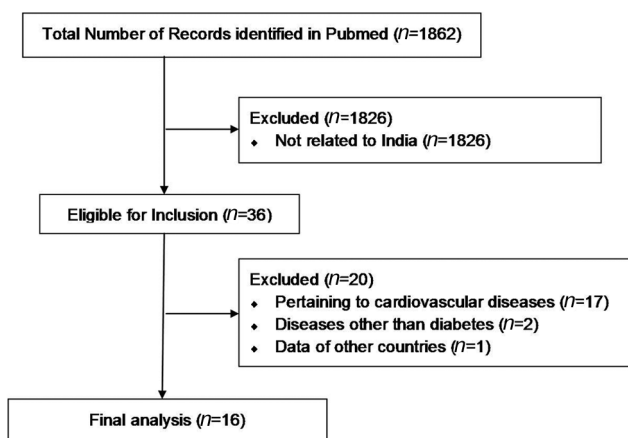
## RESULTS

In total, 16 articles were available out of the 1862 articles for final analysis. The majority of the articles were original research articles (13 out of 16) and the remaining three constitute review article, case report, and an alternate hypothesis on the relation between stress and diabetes. The details of all the articles are given in Table 1. There is gradually increasing contribution in the last decade with three research articles published in 2012. The research output is mainly contributed by All India Institute of Medical Sciences (AIIMS), Delhi, MV Diabetes Centre, Chennai, and Endocrine and Diabetes Centre from Visakhapatnam. There was one article about the psychosocial management of type 1 diabetes and one article in the Ayurveda journal studying Shankhapushpi in the management of diabetes. Four articles were published in the JAPI (Journal of Association of Physicians of India) and two in the DRCP (Diabetes Research and Clinical Practice).

## DISCUSSION

Our study shows a dismal scenario regarding the research activity on the psychosocial aspects of the diabetes. The research output (16 out of 1862) constitutes only 0.008% of the global research output on the psychosocial aspects of diabetes. The research contribution from SAARC countries in the field of diabetes is very low in comparison to developed countries.<sup>[21]</sup> Psychosocial factors are often neglected in the management of diabetes and the same is evident in this scientometric analysis. The importance of the subject is gauged by the fact that the Endocrinology Society of India has recently issued guidelines on the subject.<sup>[22]</sup> There is marked disparity and low priority for research in the field of medicine in Asian countries. This could be due to the less spending of the nations on the health sector. The total expenditure of the government on the research and development is less than 1.5% of GDP (Gross Domestic Product) in SAARC countries whereas the figure is close to 3% in the USA and UK.

Scientometric analysis of articles from India covered a variety of psychosocial aspects of type 2 diabetes. They include etiopathogenesis, management, and complications



**Figure 1:** Flow diagram of the study

**Table 1: Details of the articles included in the final analysis**

Brief title of the article	Publication year	Journal	Type	Place	Setting	First author	Ref
Sleep disturbances in DM	1994	Diab Res Clin Pract	Or art	Visakhapatnam	Clinic	Sridhar	[5]
Influence of life style factors on diabetes development	1999	J Assoc Physicians India	Or art	Chennai	MVDC	Ramachandran	[6]
Self reported behavior of young diabetics	2000	Diab Res Clin Pract	Or art	New Delhi	AIIMS	Miglani	[7]
Family management in type 1 diabetes	2003	J Clin Psychology	Case report	Bangalore	NIMHANS	Sudhir	[8]
Can stress provide protection to beta cells	2003	Med Altern Hypothesis	Review	Pune	NARI	Panchnadikar	[9]
Quality of life and diabetes integration in T2DM	2003	J Assoc Physicians India	Or art	Chennai	MVDC	Shobhana	[10]
Psychosocial measure of health perception in T2DM	2005	J Assoc Physicians India	Or art	Chennai	MVDC	Rao	[11]
Yoga reduces risk factors for CVS disease and DM	2005	J Altern Compl Med	Or art	New Delhi	AIIMS	Bijlani	[12]
Stress and undetected hyperglycemia after tsunami	2006	J Assoc Physicians India	Or art	Chennai	MVDC	Ramachandran	[13]
Psychiatric comorbidity and diabetes	2007	Ind J Med Research	Review	Visakhapatnam	Clinic	Sridhar	[14]
Yoga based lifestyle intervention in diseases	2008	Indian J Physiol Pharmacol	Or art	New Delhi	AIIMS	Sharma	[15]
Yoga practice in diabetes improves outcomes	2009	Metab Syndr Relat Dis	Or art	Visakhapatnam	Clinic	Kosuri	[16]
Quality of life with T2DM in Improve ® study	2009	J Indian Med Association	Or art	Kolkata	Med college	Mukherjee	[17]
Shankhapushpi-herbomineral compound in T2DM	2012	Ayu	Or art	Ahmedabad	Ayu college	Patel	[18]
Yogic breathing improves quality of life in T2DM	2012	Indian J Endocrinol Metab	Or art	New Delhi	AIIMS	Jyotsna	[19]
Stress and diabetes in socioeconomic context	2012	Social Science Med	Or art	New Delhi	Clinic	Mendenhall	[20]

of the diabetes. The study of psychosocial factors helped in the establishment of the fact that premix insulin admitted through painful devices was more efficacious and patient friendly than conventional insulin in the syringe and the bottle.<sup>[17]</sup> The importance of family education and psychosocial intervention is described in an adolescent with type 1 diabetes.<sup>[8]</sup> Other research reports identified that 40% patients do not disclose the details about their diabetes and an episode of hypoglycemia is a motivating factor for the same.<sup>[7,11]</sup> Sleep disorders were associated with the presence of microvascular complications and is responsible for hyperglycemia leading into a vicious cycle.<sup>[5]</sup> Few researchers performed population studies and identified that the stress is an important contributory factor for their diabetes and the individuals in lower socioeconomic strata have higher rates of depression with diabetes.<sup>[9,13,20]</sup> Yoga postures and yogic breathing helped in improving glycemic control and the quality of life in diabetes.<sup>[12,15,16,19]</sup> Another population survey from Chennai suggest that patients with diabetes who emotionally adjust to the disease experience a sense of psychological well being.<sup>[10]</sup> India is the home to alternate forms of medicine and there is an interesting study in Ayurveda journal. A psychological health promoting drug called

Shankhapushpi showed benefits on the psychological parameters.<sup>[18]</sup>

There is an urgent need to understand the changes in research output from India with the change in disease burden and health priorities. The limitations of our study are inclusion of research citations from PUBMED indexed journals only and use of highly selective search terms. Few authors might have published their report in nonindexed journals and used psychiatric morbidity that may not have come up in our search results.

To conclude, the research output from India on psychosocial aspects of diabetes mellitus is unsatisfactory. The psychosocial factors are to be addressed in the newly developed patient centered care model of diabetes. There is a need for more collaborative studies between India and SAARC countries to develop locally relevant, socially and culturally acceptable alternate models of care in diabetes.

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