

## Review article

**Barriers related to self-care management among people with diabetes mellitus-  
A narrative review**

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**ABSTRACT**

Diabetes is a challenging disease that is considered to be hard to live with as it encompasses a lot of restrictions, lifestyle and behavioural modifications. Self-care management behaviors are very much essential to control glycaemic values and future complications. Although an important aspect leading to positive health outcomes among diabetic patients, diabetes self-care management is usually a complex process. This narrative review summarizes barriers related to self-care management among people with diabetes. The literature was searched through databases like PubMed and Google Scholar with help of keywords and MeSH terminologies. Furthermore, selected articles reference list was also screened. It is concluded that self-care management in diabetes mellitus is often surrounded by many barriers. Deficiency of environmental resources and assisted strategies, poor awareness regarding self-care skills, lack of motivation and financial constraints are the major barriers faced by people with diabetes mellitus. Endeavour to withdraw barriers are prime in aiding people living with diabetes which will help to improve their quality of life and to attain positive results.

**Keywords:** Barriers; challenges; diabetes mellitus; self-care management.

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**INTRODUCTION**

**D**iabetes mellitus (DM) is one of the prominent lifestyle ailments contributing to high mortality and morbidity rates across the globe (1). According to International Diabetes Federation (2019) nearly 463 million people across the globe are suffering with diabetes (2). India bears a burden of 77 million people affected with diabetes, with prevalence of 8.9% (3-4).

Diabetes causation has shown to be multifactorial, inducing many genetic factors, lifestyle factors, environmental factors to play a vital role. The rising trend of diabetes along with other metabolic abnormalities such as obesity, hypertension, and dyslipidaemia has given it a form of more towards "Lifestyle disease" which includes multiple factors like food intake, stress, physical activity, food pattern, balanced diet etc (1).

Diabetes management is a multifaceted area such as pharmacotherapy, lifestyle modification and treatment compliance. Positive self-care behaviours have a vital role in diabetes management as it directly corresponds to have positive health consequences i.e. righteous blood glucose control, better quality of life and decrease in mortality due to this ailment (5,6). Diabetes self-care management measures involve endorsing behavioural activities like eating nutritious food, medication compliance and adherence, being physically active, measuring blood glucose levels, bring down risks, and healthy coping etc. Although an important way to achieve positive health outcomes yet

inculcating healthy diabetes self-care behaviour has long been a difficult task often faced with many barriers (6,7). These barriers slow down the treatment process and make managing the disease more difficult. Ranging from personal to financial to health-related obstacles, the barriers list is endless (5,6).

Low level of awareness related to self-care activities and self-management has been highlighted as a major barrier in this process (7). Various national and international research studies reported financial constraints to be another barrier which lead to persons' inability to access diabetes care at hospital and clinical facilities and follow the appropriate dietary recommendations (8-10). Nagelkerk *et al.*, reported that personal belief and unacceptability of healthy behaviour owing to various extraneous factors further make the situation worse (11). Many other socio-cultural and demographic barriers such as insufficient access to drugs, client-health provider relationship, age group, physiological health condition of person, type of DM, degree of symptoms, severity of disease, uneven distribution of health care facilities between rural and urban zones further impact self-care practices (9-11). As far as India is concerned, along with above mentioned barriers the scarcity of resources and ever increasing out of pocket expenditure on treatment further adds to misery. However the burden can be lessened through engagement of people in self-care behaviours which may result in positive therapeutic end results.

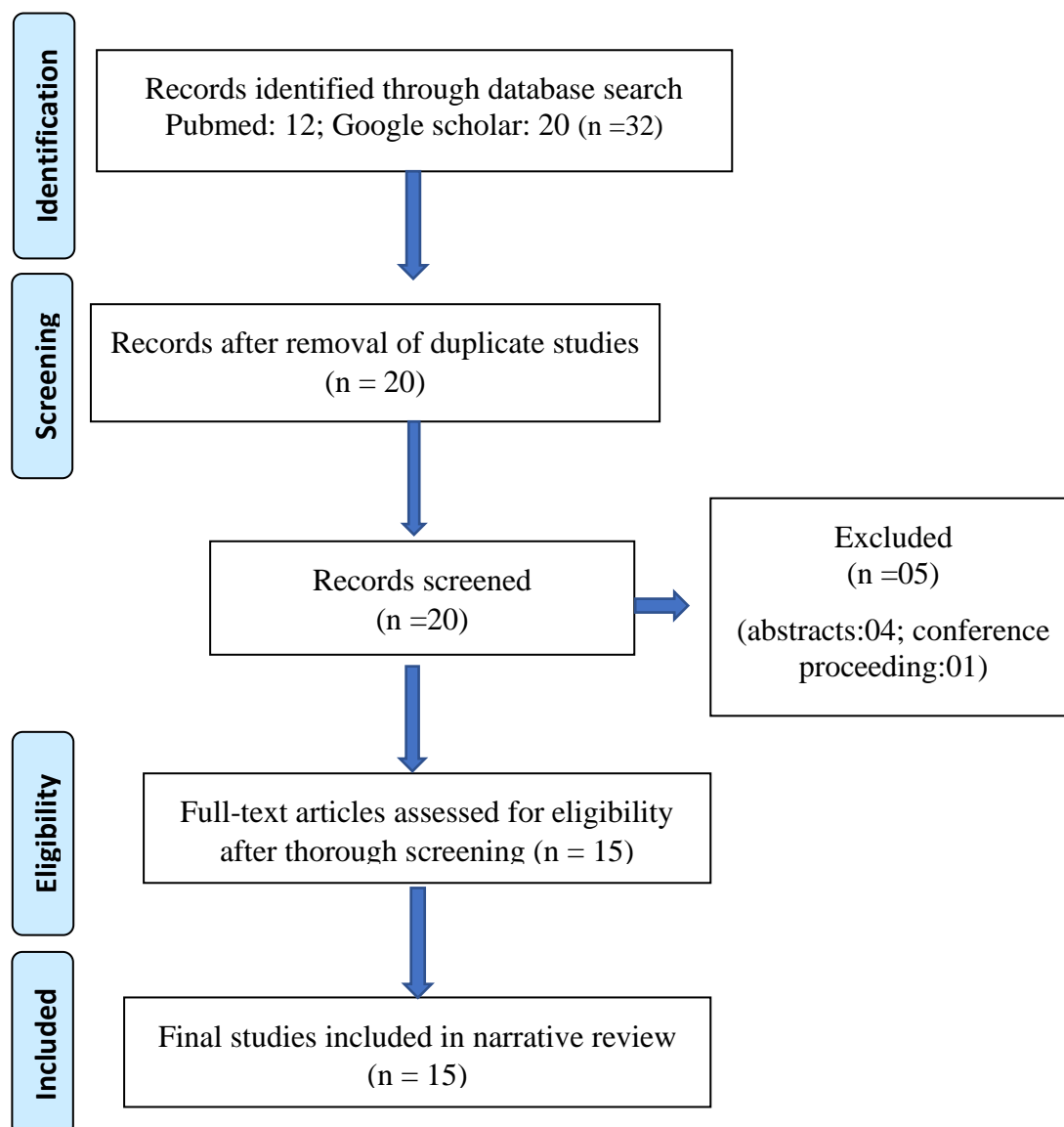
In order to manage disease effectively, people had to adapt their lives and accept the new changes in

lifestyle for rest of life (1). Self- management is although an effective solution to this but at times it can be tough and annoy for both patients and clinician owing to various barriers which are very much complex and multifarious (5). To date, a significant amount of literature on factors impacting diabetes self-care management has been published. Most studies however restricted to one or another geographical area and focused on only one or another type of DM. This emphasizes the need for comprehensive scrutiny of reasons acting as barriers to diabetes self-care management. Elaborated facts and information are required about which barriers present the significant hurdle and from this; practical, cost-effective interventions need to be developed.

## METHODS

This narrative review summarizes barriers and challenges associated to self-care management among

people with diabetes mellitus. Databases such as PubMed and Google scholar were browsed with help of keywords i.e. “barriers”, “factors”, “difficulties”, “self- management”, “diabetes mellitus”. All selected articles reference lists were also scrutinized for other relevant studies. Evidenced based full text research studies with quantitative or qualitative research approach, written in English language, published during last ten years (2011-2020) were included in the review. A total of 32 relevant articles were retrieved, out of which 12 duplicate articles were removed and rest 20 articles were screened. Further 5 more articles were excluded as these were abstracts or conference proceedings. Final narrative review included 15 articles. (PRISMA flow diagram; Fig. 1 and Table 1) All the included research studies were thoroughly read and evaluated. The narrative review is being arranged under broad themes of various barriers in self-management of diabetes.



**Fig.1: PRISMA Flow Diagram**

**Table 1:** Literature review summary table

Author;Year; place/country	Methodology (study design, setting, sample size, participants)	Key result & Conclusions
Beverly <i>et al.</i> , 2011, Pennsylvania, (12)	Thirty-two community dwelling adults (aged 60 years or above) previously diagnosed with Type 2 DM and at least one other comorbid health condition were purposively selected to take part in focus groups interviews.	The main obstacles reported by elderly patients with Type 2 DM were feeling of frustration, confusion about conflicting treatment recommendations related to co morbid conditions especially about diet, physical activity and medication.
Wangnoo <i>et al.</i> , 2013, (13)	A review article to identify various solutions to barriers in the effective use of insulin therapy, impact on convenience and life-style and lack of awareness and education	Poor awareness regarding diabetes and its complications among patients, poor support from families, behavioural beliefs, resources scarcity, and suffering from ailments, poor emotional control, and poor support system are few of the highlighted barriers.
Shrivastava <i>et al.</i> , 2013,(14)	Literature review by reviewing the available literature and studies on diabetes self- care.	Poor access to medicines, escalating cost of treatment, satisfaction of patients with medical care they receive, relationship between patient and health care provider, severity of symptoms, uneven distribution of health facilities were identified as major obstacles in the path of DM management.
Chethan and Shashank,2015 Karnataka, (15)	12 focus group discussions were conducted with healthcare providers and care seekers from the community respectively. Content analysis of transcriptions from the audio recordings was done thereafter.	Socio- economic and cultural constraints, diet restriction, and difficulty in changing overall lifestyle behavioural practices were few of the main barriers.
Chan <i>et al.</i> , 2015,Canada, (16)	A qualitative deductive thematic analysis was carried by using six phases of analysis so as to transcribe, code, and analyse participant interviews.	Social isolation, enhancing agency and resilience, food insecurity appeared to badly impact diabetes self-management.
Fritz <i>et al.</i> , 2016, Michigan, (17)	Focus group qualitative content analysis was done to assess patient and health workers view on DSM and cultural barriers and enablers among Arab American patients.	Limited resources, stigma, lack of family support emerged as barriers to DSM.
Abdul Rehman <i>et al.</i> , 2016 Kenya, (18)	Ethnographic exploration of self-care behaviours and associated factors was carried among 30 Swahili adults living with type 2 diabetes.	Most influential factors leading to poor self-management behaviour were financial factors like poverty and high cost of health care.
Adu <i>et al.</i> , 2019, Europe, Australia, Asia, America, (19)	A mixed type (qualitative and quantitative) online survey carried out among 217 patients with diabetes mellitus recruited across Europe, Australia, Asia, and America.	Various barriers/ challenges explored were frustration, financial constraints, unrealistic expectations and poor work environment.
Hushie, 2019, Accra, Ghana, (20)	This in-depth qualitative study was carried out among 33 adult diabetic patients and 3 health care providers who were purposely selected from the diabetes clinic of a private hospital in Accra, Ghana.	Unacceptance of diagnosis; changing diets; social roles and functions interfering with dietary regimens were the main barriers.
Jasmine and Iyer, 2019, Tamil Nadu, (21)	A quasi-experimental study was conducted among diabetes patients attending the rural health centres of Tamil Nadu. Data on knowledge, attitude, practice and barriers against self-care was collected using structured questionnaire.	The most commonly reported barrier for self-care was either lack of awareness or lack of time.
Kavya and Bant, 2019, Karnataka, India, (22)	A cross sectional study carried out among 140 type 2 DM patients attending OPD of Karnataka Institute of Medical Sciences, Hubballi.	Evidently, the results reported poor self-care practice in almost all dimensions of diabetes self-care management. Poor knowledge and lack of motivation were the main culprit towards this poor practice.
Whittemore, <i>et al.</i> , 2019 Mexico, (23)	Qualitative study conducted among 20 participants from 3 primary care clinics located at Mexico City. The subjects were recruited using convenience sampling. Data were analysed using a content analysis approach.	Main barriers identified were cultural beliefs related to diabetes care, lack of resources, challenges to lifestyle modification, lack of family support, inability to meet competing demands, lack of resources and mental health issues.

Author;Year; place/country	Methodology (study design, setting, sample size, participants)	Key result & Conclusions
Pamungkas <i>et al.</i> , 2020, Indonesia, (24)	A qualitative study was carried out in Indonesian Communities, West Sulawesi. 28 key informants (patients, family members, healthcare providers and village health volunteers) were subjected to in-depth interviews and focus group discussions.	Prominent barriers towards diabetes mellitus self-management practice included low perception of severity of illness; insufficient knowledge; lack of motivation; human resources scarcity and social exclusion.
Suglo and Evans, 2020, Africa, (25)	Qualitative studies published within year 2000 to 2019 were searched using databases i.e. MEDLINE, EMBASE, PsychINFO, SCOPUS and CINAHL. After data extraction thematic analysis was done to identify descriptive and analytical themes.	Long waiting times and costly diabetes treatment were identified as main challenges towards practice of diabetes self-care.
Açıl and Bahar, 2019, Turkey, (26)	Phenomenological study conducted among 15 patients living with diabetes. These patients were subjected to in-depth face-to-face interviews.	Poor knowledge, non-adherence to diabetes and exercise regimen, issues in health care delivery, fear, and poor support from family and the society were the main barriers.

## RESULTS AND DISCUSSION

While there was no permanent cure for diabetes mellitus, with proper treatment and self-care management strategies a diabetic person can live a healthy life. Promoting effective self-care management is a very complex and challenging process which is bound by many barriers ranging from an individual level barrier to health infrastructure barriers. The current narrative review explored and identified following barriers associated with self-care management among diabetes people (Fig. 2)

### Poor awareness and health literacy regarding self-care activities

Adequate knowledge regarding various self-care activities is an important impetus leading to positive health outcomes where as poor awareness regarding self-management behaviour negatively impact disease management process. Notably limited disease knowledge, lack of information related to dietary and other lifestyle modification to be made, poor awareness related to wound care, blood glucose monitoring, etc. are the highlighted barriers in self-care management. Compatible with this study, it has been evidenced that inadequate health care literacy had a negative impact on diabetes people' ability to solve their medical health issues and lead to poor adherence (21). These findings correspond to the results of studies conducted previously wherein most of the participants reported lack of awareness as a one of the important barrier for self-care management of diabetes mellitus (19,27). Insufficient information especially about measurement of blood concentrations, impact of alcohol and smoking on body when incorporated with diabetes also make diabetes self-management a challenging process (26).

### Financial constraints

Financial factor plays an impactful role in self-care activities of diabetes mellitus. Provision of resources

and financial support is important in order to attain better outcome of positive health. Evidently lack of resources, insufficient support system related to money and finance, inadequate provisions of fiscal factor act as barrier to self-management in diabetes mellitus. Moreover, the chronic nature of the disease also ask for continued investment in health care which in long term expose individual to financial crunch especially in Low income countries such as India. These results corroborate with the findings showed in a study carried by Shrivastava *et. al.*, (14), Whittemore *et. al.*, (23) and Suglo *et. al.*, (25) as high cost of the health care facilities, equipment and treatment modalities restricted self-care management activities. Loss of wages and transportation costs are also highlighted as major financial constraints (15).

### Lack of support system

Support system plays a very crucial role to cure any disease or disabilities. It is not only emphatically related with the individuals' recognized self-efficacy in managing diabetes-related changes but also with the genuine self-care management behaviours. To a larger extent it is anticipating of adherence to healthy diet, regular exercise, adherence to medication and blood glucose-monitoring regimen. Lack of support system related to family, peer group, friends, society, finance, professional assistance and medical guidance leads to negative impact on self-care behaviour. Although an important element, most the research evidences reported existence of poor support system (13,16,20). Not getting desired support from family members, lack of agreement on decisions making and conflict with the family members put a significant challenge (17).

### Severity of disease and associated co morbidities

Diabetes is a chronic ailment which needs lifelong adherence to many lifestyle modifications and treatment modalities. Degree and severity of

symptoms have been found to be related with the practice of self-care care activities among diabetic persons (16,24). Moreover the presence of other comorbidities such as HTN, Hyperlipidaemia and obesity also impact significantly the self-management process. The cardiovascular complications due to raised glucose levels were identified as a major contributor to delay in insulin initiation, monitoring, adherence to dietary adherence etc (13). Prioritizing health conditions is also a major concern. Additionally, managing co-morbidities along with diabetes had a negative effect on emotional comfort of a person (5). As highlighted in a research conducted by Beverly *et al.*, diabetic people while amalgamate different health care behaviours for co morbid health issues feels extremely stressed and frustrated due to varied treatment recommendations, especially related to healthy diet, regular physical activity, and adherence to medication regimens (12).

### Culture beliefs and practices

Many cultural capabilities influence an individuals' health beliefs and values, attitudes, health literacy, thereby influence diabetes self-care management. There were various cultural values and beliefs which are associated to disease conditions, its treatment and prognosis factor but blind faith on myths related to medication, taboos related to diabetes self-care practices affect the prognosis of diabetes mellitus. In

this reviewed literature, some studies have placed emphasis on the importance of the cultural variances of the individual. Extensive use of alternative remedies, myths, fear of bio-medical treatment modalities among few cultural groups have been highlighted in the literature. Religious rituals like fasting were also reported to affect diabetes self - management behaviour. The lived experience of people living with diabetes reported many strains related to dehydration and binge eating during fasting (18). Moreover, cultural constraints and difficulty in dietary restriction has been identified as a major obstacle (15,16).

### Lack of time

Time management is mandatory for performing self-care activities in diabetes mellitus. Several studies provided lack of time as a prominent factor in self-management of diabetes mellitus. One of the research studies conducted by Jasmin and Iyer reported that lack of time was most common barrier for dietary modification (35.1%), blood sugar check-up (48.1%) and second common barrier for exercise (32.5%) (21). Evidently sedentary lifestyle, shift and duty change, hectic schedule of work environment, other social and familial obligation were identified as major contributor to this lack of time and put harmful impact on self-care activities (19,25).

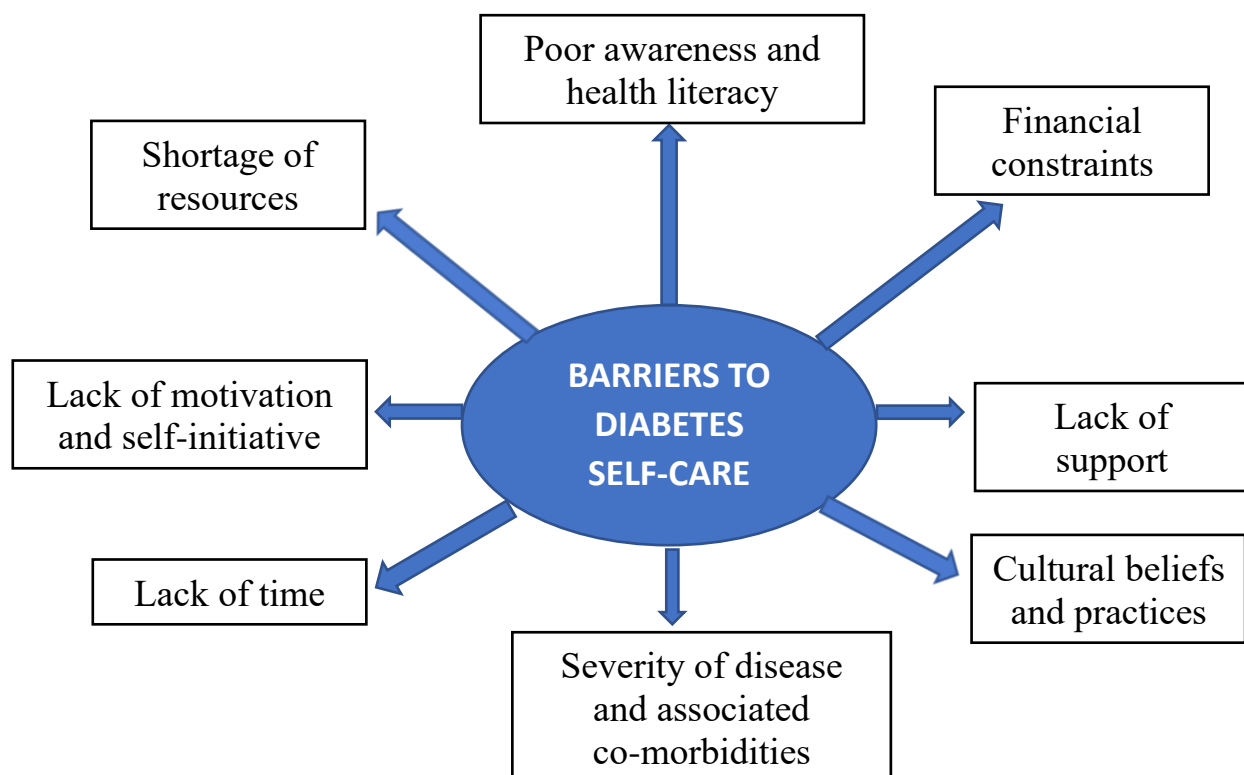


Fig. 2: Barriers to diabetes self-care management

## Lack of motivation and self-initiative

A prominent barrier to self-care management in any disease process is lack of motivation and self-initiative by an individual. Self-motivation and initiating self-care activities always lead to better adherence whereas lack of this lead to negative health outcomes. Pamungkas *et al.*, conducted a study to find out barriers in self-care management of diabetic mellitus among people with poor glycaemic control in Indonesia wherein it was evidenced that some of the diabetics were less participatory in the diabetic mellitus self-practice program owing to absence of role model, conflict with family members and lack of support (24). In agreement to these finding Kavya and Bant reported that nearly 19% of the subjects under study reported lack of motivation as a major barrier in self-care practice (22).

## Shortage of resources

Shortage of resources infers with optimal diabetes self-care management. Specially, unavailability of drugs, and supplies, such as glucometer strips, lack of place of exercise etc have been expressed by diabetic persons and health care providers as major barrier to self- management (13,23). Moreover the lack of access to healthy diet, health facility, lack of health staff at health facilities add up to the existing barriers (16, 24).

## Limitations

The findings of current review must be interpreted considering few of the limitations. All the relevant published literature have not been included due to exploration of limited databases. Including a wider range of databases would have enhanced the transferability of the findings.

## CONCLUSION

Self- care management of diabetes have been advocated by many national and international health organizations as it leads to better health outcomes. Although a meaningful concept, self-management is a very complex process surrounded by many barriers.

The narrative review pins up a comprehensive picture of various barriers impacting self-management of diabetes. Poor health literacy, financial crunch and lack of support system are the major barriers. Adding to this presence of various cultural and religious beliefs and practices, lack of time and resources add up to misery. Further chronic nature of the diabetes makes it difficult for a person to adhere to various preventive and control measures.

Current evidence highlights the need to conduct studies to address the research gap to better understand self-care management process in diabetes mellitus. There is need to create multipronged

awareness activities and training programs primarily focussing on making people empower to adopt and practice self-care behaviours.

## CONFLICT OF INTEREST

The authors declare no conflict of interest.

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