

A Survey Report of Perceptions of Needs and Self- Management Capacity Among Diabetic Patients in Selected Rural Villages in Kancheepuram District, Tamil Nadu

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ABSTRACT

Understanding the needs of rural diabetic patients in managing diabetes mellitus (DM) is now of foremost importance to control DM equitably in India. **Objective:** A needs assessment regarding the awareness of diabetes and capacity for self management among a group of diabetic patients as a pilot study to develop content for home based health education material. **Design:** A cross-sectional study using a quantitative approach. **Setting:** 3 rural villages in Kattankulathur Block of Kancheepuram District, Tamil Nadu, India. **Participants:** 30 patients who had been undergoing treatment for DM selected by Convenience sampling. **Results:** Overall 72.5% of diabetic patients are motivated to have knowledge and refer to it to manage DM on their own. 66.67% of diabetic patients believe that DM is manageable in terms of self-testing, self-weighing, and physical exercise when combined with routine medicine. However, 52.50% of diabetic patients is conscious of barriers to self-management including time to go to hospital, money for treatment, dietary change and access to advice about exercise. Overall 64.17% of patients perceived a need for or benefit from professional guidance. **Conclusion:** It has been concluded that rural diabetic patients in India are highly Motivated to gain knowledge about self-managing DM and establish a management plan; they are also confident to varying degrees in their ability to self-manage. They strongly favored professional guidance and peer support. Based on the study findings an intervention strategy for home-based care was developed using a nurse as the main agent.

Keywords: diabetes mellitus, non-communicable disease control, patient perception, rural health, self-care.

INTRODUCTION

India currently has over 65 million people aged 20-79 with diabetes mellitus (DM), second to China and far outstripping the United States in thirdplace¹. Meanwhile, 30-year projections have leaped from 79.4 million in 2030 to 109 million in 2035^{1,2}. India has been a high achiever in terms of maternal and child mortality and to a lesser extent infectious diseases; now the burden of chronic disease and the need to deliver specialized services is testing the limits of a Health system that remains fragmented, inequitable and costly particularly for lower socioeconomic groups and rural areas³⁻⁵. Amongst chronic diseases, diabetes remains undiagnosed and unreported at higher rates in rural areas⁶. Understanding the needs of rural diabetic patients in managing DM is now of foremost importance to control the disease equitably in India. According to Phase I results of the Indian Council of Medical Research-IndiaDIABetes (ICMR-INDIAB) study, one of 10 people in Tamil Nadu is diabetic, and two in 25 are in the prediabetic stage, the equivalent of 4.2 million and 3.5 million individuals respectively⁷. In TamilNadu's capital, Chennai, diabetes awareness within the general population remains low in spite of these numbers. Moreover, despite Chennai's status as a "model city" for diabetes education, awareness of risk factors and complications amongst

diabetic patients is also inadequate⁸. Peripheral populations are expected to be even less resourced to contemplate DM.⁸ In India rural populations face exclusion for multi-dimensional reasons from specialized health services, resulting in inadequate attention, follow-up and education⁹. Lower socio-economic groups can struggle in the face of increased health care costs, the complications to different organs, and the psychological reaction in adjusting to the requirements of their new health care regime and lifestyle changes¹⁰. Yet management of DM, and prevention of its complications and premature mortality rely significantly on a patient's capacity to learn and adopt self-care skills⁴. A patient-centered approach is thus imperative for understanding patient needs and promoting development of the capacity for self-care to maintain quality of life. Community-based care is the ideal level to develop specific interventions under this approach. In a resource-poor environment community-based care is also strategically important to manage diabetes so as to avoid complications requiring higher levels of care. However there is no current community based model of care in Tamil Nadu. Meanwhile a gap persists in research in developing countries on patient perception Particularly amongst diabetic patients in rural areas⁴. In light of this gap, this

study was conducted among diabetic patients in selected rural villages in Tamil Nadu, to ascertain their perception of needs in terms of their capacity to self-manage the disease and the role of support mechanisms to enhance self-management.

MATERIALS AND METHODS

Study area, participants and study period

The investigator selected three villages in Kattankulathur Block in Kancheepuram district Tamil Nadu. Kattankulathur is a rural division on the outskirts of the state capital, Chennai, and catchment area of SRM University’s Department of Community Medicine. The investigator used convenience sampling to recruit 30 self-reported diabetic patients. This study was carried out during May 2013, based on morning visits excluding Sundays. The participation rate was 100%.

Questionnaire survey

The subjects were administered a survey to determine their self-perception of needs to self-manage diabetes. The survey was designed to elicit information that would form the basis of a home-education program for self-management. The survey was conducted in Tamil, the participants’ first language, and the statements and answers have been translated into English by the lead investigator for this paper.

The quantitative survey consisted of 22 statements with 6 dimensions: namely (i) self confidence in managing DM, (ii) family support, (iii) barriers to care, (iv) motivation to seek guidance, (v) professional guidance, and (vi) peer support. Each statement required the respondents to answer using a three-point scale: Agree, No opinion, and disagree.

RESULTS

Self-confidence in managing DM

Four statements related to self-confidence, as shown in Table 2, and confidence was generally high with an aggregate two-thirds, or 66.67%, of diabetic patients believing that DM is manageable for themselves in terms of self-testing, self-weighing, and physical exercise when combined with routine medicine. Twenty-three (76.67%) diabetic patients agreed that DM is manageable and 25 (83.33%) had confidence to measure their weight loss. However, patients were more confident to weigh themselves than to measure blood glucose, and confidence was lowest with regard to managing DM with physical exercise in addition to routine medicine.

Family support

Three statements related to family support, as shown in Table 2. More than half (16; 53.33%) of the patients were confident that their family members can help them in managing DM, with more again (18; 60%) agreeing that their family members encourage them in adhering to a diabetic diet. Overall 61.11%of diabetic patients agreed that their family played a supportive role, especially when they were sick (21; 70%).

Barriers to care and self-management

Four statements related to barriers to care, as shown in Table 3. Fifteen patients (50%). Have no time to visit

Table 1: Perception among rural diabetic patients of self-confidence in managing diabetes mellitus, n=30

Statement	Agree	Neutral	Disagree
Diabetes is manageable	23 (76.67)	4 (13.33)	3 (10.00)
Testing glucose levels by myself is possible	18 (60.00)	2 (6.67)	10 (33.33)
Measuring weight loss by myself is possible	25 (83.33)	3 (10.00)	2 (6.67)
Diabetes can be managed with physical exercise in addition to routine medicine	14 (46.67)	7 (23.33)	9 (30.00)
Total percentage	66.67	13.33	20.00

Results are expressed as number of individuals (percentage).

Table 2: Perception among rural diabetic patients of family support, n=30

Statement	Agree	Neutral	Disagree
My family members help me in managing diabetes	16 (53.33)	4 (13.33)	10 (33.33)
My family members encourage me to adhere to a diabetic diet	18 (60.00)	2 (6.67)	10 (33.33)
Family members take care of me on a sick day	21 (70.00)	3 (10.00)	6 (20.00)
Total percentage	61.11	10.00	28.89

Results are expressed as number of individuals (percentage).

Table 3: Perception among rural diabetic patients of barriers to care and self-management, n=30

Statement	Agree	Neutral	Disagree
I have no time to go to hospital for treatment of diabetes	15 (50.00)	7 (23.33)	8 (26.67)
I do not have enough money to spare for treatment for diabetes	14 (46.67)	7 (23.33)	9 (30.00)
I am not able to regulate my food habits to manage my diabetes	15 (50.00)	5 (16.67)	10 (33.33)
I am not able to obtain guidance for physical exercises to manage diabetes	19 (63.33)	2 (6.67)	9 (30.00)
Total percentage	52.50	17.50	30.00

Results are expressed as number of individuals (percentage).

hospital; the same proportion agreed they were not able to regulate their food habits, While slightly less—14 patients (46.67%)—did not have enough money to spare, the greatest barrier was perceived for access to guidance for physical exercises to manage DM: a total of 19 (63.33%) agreed that they were not able to obtain guidance. Overall 52.50% of diabetic patients is conscious of barriers to care and self-management including access to advice about

Table 4: Perception among rural diabetic patients of own motivation to seek knowledge, n=30

Statement	Agree	Neutral (n)	Disagree
It would be better to get knowledge to manage diabetes on my own	23 (76.67)	2 (6.67)	5 (16.67)
I am interested to learn more on managing diabetes on my own without visiting hospital	18 (60.00)	7 (23.33)	5 (16.67)
I am interested to draw up a plan for learning home-based self-management education to manage diabetes	26 (86.67)	2 (6.67)	2 (6.67)
It would be better to have a record of my diabetic status for further assessments	20 (66.67)	4 (13.33)	6 (20.00)
Total percentage	72.50	12.50	15.00

Results are expressed as number of individuals (percentage).

Table 5: Perception among rural diabetic patients of need for professional guidance, n=30

Statement	Agree	Neutral	Disagree
I need assistance from the nurse for my psychological preparation to cope with diabetes	15 (50.00)	8 (26.67)	7 (23.33)
It would be better to get professional guidance to manage diabetes on my own	26 (86.67)	4 (13.33)	0 (0.00)
I need professional guidance to get suitable feedback on my diabetes	19 (63.33)	4 (13.33)	7 (23.33)
Professional guidance as to when I should consult with diabetologists would help me in self-management	17 (56.67)	9 (30.00)	4 (13.33)
Total percentage	64.17	20.83	15.00

Results are expressed as number of individuals (percentage).

exercise, time to go to hospital, dietary change, and money for treatment.

Motivation to seek knowledge

Four statements related to motivation to seek knowledge, as shown in Table 4, and Motivation was generally high. Motivation peaked in 26 (86.67%) patients who were interested to draw up a plan for learning about self-management but was also high in 23 (76.67%) patients who agreed that they would benefit from knowledge to

Table 6: Perception among rural diabetic patients of need for peer support, n=30

Statement	Agree	Neutral	Disagree
Association with peers would be helpful for me to manage diabetes	24 (80.00)	4 (13.33)	2 (6.67)
Sharing my experiences with peer groups would help me control my glucose level	17 (56.67)	5 (16.67)	8 (26.67)
Total percentage	68.34	15.00	16.67

Results are expressed as number of individuals (percentage).

manage DM on their own. Two-thirds (20; 66.67%) believed it would be better to have a record of their own diabetic status, with slightly less interested to learn more about self-management of DM without visiting hospital. Overall 72.5% of diabetic patients were motivated to have knowledge and refer to it to manage DM on their own.

Professional guidance

Four statements related to need for professional guidance, as shown in Table 5. The statement that it would be better to get professional guidance to manage DM scored the highest agreement of all 22 statements; 26 (86.67%) agreed and not one patient (0%) disagreed. However the specifics of that professional guidance were nuanced; guidance specifically for appropriate feedback on DM was agreed as beneficial more consistently than guidance on when to consult a diabetologist, and more consistently again than assistance from a nurse for psychologically coping with diabetes.

Peer support

Two statements related to need for peer support, as shown in Table 6. Twenty-four (80%) of patients would find it helpful to associate themselves with peers to manage DM but in a general sense rather than specifically with regard to controlling blood glucose level, for which 17 (56.67%) agreed.

DISCUSSION

Diabetes has no cure; it can only be prevented, or managed. DM education and self-management programs hope to promote understanding of diabetes, allowing patients to be more knowledgeable about what will positively benefit their long-term health as they live with the condition. However in India awareness is low regarding the nature of diabetes, its growth in prevalence, and that it can be prevented, and poor literacy in rural areas compounds this^{6,8}. Knowledge gaps overall are particularly evident for factors including diet and exercise^{8,9}. Meanwhile, clinical and structural support systems are invaluable to monitor and motivate self-care; however, such development remains limited in coverage in India and diabetes self-management education lags severely^{11,12}. This study sought to investigate the perceptions of diabetic patients in select rural villages in southern India, regarding their individual needs, their capacity for self-care and management, and the role of support mechanisms

including family, peers, nurses, and diabetologists. Although the research is limited by the sampling method and sample size, as part of a pilot study it is an important first step in developing and testing content for a home-based self-management education program to bridge the gaps in diabetic patient support in rural areas. Motivation to seek knowledge was very high. Self-confidence was also relatively high but patients were more confident of their own capacities than their families' capacity to support them. There was a distinct lack of positive perception regarding physical exercise, whether combining it with routine medicine to manage DM, or access to guidance on physical exercise. Overall patients' perceived of need or potential benefit was highest for professional guidance; however, the nuances of that need further elucidation. Indeed other researchers have noted how the patient professional relationship is set to change in the face of strategic shifts to deal with diabetes, with Unknown impacts on patient behavior and satisfaction¹¹.

CONCLUSION

Among rural diabetic patients in southern India the motivation for education in self-care is strong, but qualified by a variety of accessibility and personal capacity barriers. Community based strategies should focus on improving self-management capacity by targeting familial and professional support networks around the patient as well as the common barriers of access and cost. Based on the findings of the study an intervention strategy was developed using a nurse as the main agent of intervention. By addressing rural patients' perceived needs, the self-care capacity and outcomes of diabetes in the underserved Indian rural population may be significantly improved.

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