Original Article

Self-Care Practices (SCPs) among the Type II Diabetics Affiliating to the Self-Help Groups (SHGs) in Bangladesh

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ABSTRACT

The present paper is an initiative to assess self-care practices of the deadly disease diabetes among the members of the self-help group in the Jashore district of Bangladesh. Generally speaking, type 2 diabetes is the mother of all illnesses, and self-care practices such as blood sugar monitoring, nutrition control, physical activity, medication adherence, and foot care are the cornerstones of its treatment. However, in under-developed nations like Bangladesh, where the cases are more prevalent, a limited study is being conducted and there is a lack of understanding about self-care. The study's aim was to investigate the self-care practices of type II diabetics among the members of self-help groups in Bangladesh, so as to assess the relationship between self-care practices and blood sugar levels among members of self-help groups in Bangladesh as well as to add to the existing knowledge. The data indicates that education, reading level, economic status, desire to control diabetes, lack of information about diabetes and its complications, and self-care habits in the research region have a direct association.

GRAPHICAL ABSTRACT

Introduction

Type II diabetes is a growing clinical and public health problem; it is the most dangerous disease and has a severe impact on our lives. It is a prominent cause of mortality in recent times. It is described as a group of common metabolic abnormalities which result in hyperglycemia as a phenotype. The low insulin secretion, decreased glucose use, and increased glucose production are all contributing reasons to hyperglycemia. This is one of the most common causes of blindness as well as coronary heart disease [1]. According to International Diabetes Federation (IDF) reports in 2019, the projected diabetes population by the end of 2030 and 2045 is expected to be 578.4 million and 700.2 million, respectively [2]. Despite all the efforts, the patients may have high blood sugar, which leads to self-care practices, where the diabetic people take care to maintain the optimal health conditions [3]. In the case of diabetes patients, the objective of self-care treatment is to avoid the diabetes-related complications. The diabetes leads to mortality, loss of productiveness. However, this can be taken care of by regular exercise, monitoring blood sugar, and following the advice of the doctors [4]. Patients, who have better self-care practices, live longer, enjoy a better quality of life and face fewer complications in their life as compared to non-self-care practitioners [5]. According to WHO data, this illness has already afflicted 285 million people and is the leading cause of 3.2 million fatalities. Six people die every minute and 8700 people die per day, with these numbers expected to rise by 42 percent and 70 percent in industrialized and developing nations, respectively, by 2030 [6]. This leads to the higher healthcare expenses, as well as a slew of life-threatening problems such as diabetic retinopathy, nephropathy, peripheral neuropathy, cardiovascular disease, diabetic foot, and peripheral artery disease [7]. Previous research revealed the lack of self-care habits [8-11].

In Bangladesh, a growing pandemic of nosocomial lifestyle illnesses such as diabetes, heart disease, and cancer has emerged. The major reason for this is due to the demographic shifts, rising obesity rates, and the embrace of Western civilization [13]. As per the IDF research from 2011, Bangladesh has an estimated 8.4 million diabetic patients, which is anticipated to quadruple by 2030 [14]. Diabetes is more common in urban regions of Bangladesh than in rural areas [12]. Depression has been associated with hyperglycemia and diabetes-related comorbidities including ophthalmology, nephropathy, neurotoxicity, and macro vascular problems in patients with T2DM [15]. The well-being of those patients with T2DM diabetes and their quality of life may be negatively impacted when personal attempts to alleviate these problems fail to perform as planned, or when diabetes complications take a toll on both physical and mental health [16]. Furthermore, data suggests that patients with T2DM may have a higher risk of mental health problems during the COVID-19 pandemic due to an increased risk of death and morbidity from COVID-19 infection [17]. Bangladesh has been hit hard by the COVID-19 pandemic, with 773,513 confirmed cases and 11,934 fatalities as of May 9, 2021 [18]. Bangladesh used social isolation and home quarantine restrictions during the epidemic, restricting regular physical movement, and access to the health care [19].

Despite the lack of study on DS in T2DM patients in Bangladesh during the pandemic, several previous studies from South Asian settings before the COVID-19 pandemic reveal that the prevalence of depression in persons with diabetes was two to three times greater than in those without diabetes [8, 20].

The rationality of the study

The present study was undertaken for the women members of the self-help group of the Jashore District of Bangladesh. The members use to take an active role in the day-to-day activities of their group for the benefit of the

members as a whole. However, at the same time, it was observed by the authors that the members of self-help groups (SHGs) hardly take medicines or insulin for controlling diabetes-related complications and are aware of medical complications associated with this issue. There may be various barriers like difficulties in lifestyle changes, the improper health care system, lack of communication, low rate of literacy, inadequate medical facilities, financial constraints to have the prescribed diet and treatment. In addition, the depressive symptoms and self-medication, personal beliefs, work and environment-related factors, the unrealistic expectations, or advice of family or friends are further the major reasons for the uncontrolled diabetes (Table 1).

Table 1: Review of literature

Year	Authors [Ref.]	Observations
2017	Kugbey et al. [21]	The diabetic self-care routines of the patients are influenced by their cognitive and emotional representations of diabetes, as well as their diabetes knowledge.
2021	Goitam Molalign et al. [22]	The diabetic self-care practices of the region were determined to be inadequate. Being an urban dweller, being between the ages of 49 and 63, not having a formal education, and owning a personal glucometer at home were all linked to the effective self-care habits.
2019	Mary D Adu et al. [23]	The educational reinforcement using technology devices such as mobile applications has been recognized as a facilitator of diabetes self-management and might be used as an intervention to address the identified gaps in diabetes self-management.
2021	Migbnesh W et al. [24]	The number of people who practiced inadequate self-care was significant, emphasizing the importance of a regular follow-up as a part of long-term diabetes therapy.
2020	K P Athira et al. [25]	In the current situation, there is a higher degree of adherence to the self-care activities in terms of the blood sugar monitoring and medicine taking, but self-care in other areas, such as foot care, is critically low. The self-care practices of the patients appear to be influenced by their age, education, and socioeconomic level.
2016	Mamo M et al. [26]	Tablet combination with insulin therapy patients was 2.72 (95 percent CI 1.01, 7.40) times more likely than those treated with other treatment modalities to practice the effective self-care.
2012	Hall E et al. [27]	Self-care was revealed to be substantially related to the social support. The importance of social support in ensuring appropriate self-care practice for the many diabetes-related chores among DM patients has been noted. Perhaps this is due to the proper social support, which may need to operate as a gentler guiding force to inspire behavioral change for better self-care.
2013	Ayela K et al. [28]	An element which influences self-care behavior of the diabetic patients is their income. This finding is consistent with the findings of the study, which revealed that self-care practices of the individuals ranged from poor to the excellent ones. This might be because patients have more risky lifestyles in terms of income owing to their financial situation, as well as decreased accessibility and cost of suggested self-care practices.

Objectives of the study

✓ To study the self-care practices among the type II diabetics affiliating to the self-help groups in Bangladesh.

✓ To study the clinical and medication profile among the type II diabetics.

✓ To contribute to the existing literature.

Scope of the study

The present study is restricted to the women members of self-help groups in the Jashore District, in Bangladesh.

Sample size determination for unknown population

N= Z^2 (P) (1-P)/ C^2

(1.96)^2(0.5)(1-0.5)/(0.05)^2= 384

Where as

Z= Standard normal deviation set at 95% confidence level is 1.96

P= Percentage picking choice or response is 0.5

C= Confidence interval is 0.05

Material and Methods

The present study is based on primary data; in this regard, 633 questionnaires were distributed for collecting 384 responses. However, 423 responses could only be collected and out of this randomly, 384 were incomplete form. Therefore, all the responses which were filled properly, were included. The simple percentage method is being used to reach more and more readers. The data is captured in three parameters based on the socio-demographic profile, the clinical and medical profile, and self-care behaviors of the participants in the research.

Data Inclusion and exclusion criteria

Type II diabetic patients who are more than 20 years of age with an illness duration of a minimum of one year and those who were ready to participate in the study have been included and those excluded ones are the pregnant woman, the newly (usually less than one year) diagnosed diabetics, and those who were not willing to participate as a respondent.

Data analysis and discussion of results

Based on socio-demographic profile

Table 2 indicates that 25.26 percent of the population is between the ages of 20, and 30. Likewise, 33.59 percent is above the age of 50,

and the rest is between the ages of 30 and 50. The marital status includes 32.75 were widowed, 51.63 were married, 8.33 were single, and the rest were divorced. Regarding the education portfolio, 43.5% were primary education. 32.29% were secondary education, 8.85% were no formal education, and the remaining were college and above. Based on the employment status, 63.12% were unemployed, 25.26% were employed and these were engaged in the self-help group activities in addition to the current employees, and the remaining were irregular employment or casual workers. Based on the religious composition, majorities were Muslims with 57.03%, followed by Hindus with 18.75%, Christians with 14.58%, and the remaining were others. 85.68% of the respondents believe that they get family support and the rest does not.

Based on the residential status, 8.19% were semi-urban, 11.72% were urban, and the rests were from the rural area background. In the case of body mass index (BMI), 14.06% were underweight, 57.81% were normal weight, 16.67% were overweight, and the rest were obese. Similarly, responding to the question related to the knowledge about diabetes, 46.61% had a good knowledge about the disease, 30.21% had an acceptable knowledge and the rests had a poor knowledge. The composition of income group of the respondents includes 29.66% were very poor, 32.03% were poor, 13.57% were middle class, 11.72% were lower middle class, 8.33% were rich, and the remaining were very rich. Regarding the duration of diabetes to the respondents, 30.47% were less than five years, 37.24% were between five to ten years and the rest were more than ten years. In answer to the the question related to have a personal glucometer, 65.36% did not have the same, but the remaining had the same.

Table 2: Socio-demographic profile of the respondents under the study (N=384)

Variables	Category	Frequency	Percentage (%)
Gender	Female	384	100
Age in years	20-30	97	25.26
	30-50	158	41.15
	Above 50	129	33.59
Marital status	Single	32	8.33
	Married	231	51.63
	Divorced	28	7.29
	Widowed	93	32.75
Educational profile	No formal education	34	8.85
	Primary education	167	43.5
	Secondary education	124	32.29
	College and above	59	15.36
Employment status	Employed	97	25.26
	Unemployed	254	63.12
	Others	33	11.62
Religion	Muslim	219	57.03
	Hindu	72	18.75
	Christians	56	14.58
	Others	37	9.64
Family support	Yes	329	85.68
	No	55	14.32
Residential status	Rural	267	80.09
	Urban	45	11.72
	Semi urban	72	8.19
Body Mass Index (BMI)	< 18.5 (under weight)	54	14.06
	18.5-24.9 (normal weight)	222	57.81
	25-29.9 (over weight)	64	16.67
	>30 (obese)	44	11.46
Knowledge of diabetes	Good	179	46.61
	Acceptable	116	30.21
	Poor	89	23.18
Income	Very poor	114	29.66
	Poor	123	32.03
	Middle class	52	13.57
	Lower middle class	45	11.72
	Rich	32	8.33
	Very rich	18	4.69
Duration	< 5 years	117	30.47
	5-10 years	143	37.24
	>10 years	124	32.29
Personal glucometer	Yes	133	34.64
	No	251	65.36

Source: Primary data

Based on chemical and medication profile

As mentioned in Table 3, 59.12% of respondents had a family history of diabetes and the rest had no such a history. To answer the question related to diabetes-related complications, 13.80% were foot ulcer, 28.13% were sexual dysfunction, 32.81% had diabetes neuropathy, and the remaining were diabetes retinopathy. To respond the question related to smoking, 68.23% did not smoke, 24.22 used to smoke, and the remaining smokes casually. Similarly, in the case of drinking habits of alcohol, 63.81% did not drink, 21.61% drank the countryside liquor, and the rest used to take some time.

To answer the question related to diabetes-related hospitalization, 71.09% agreed to the same and the rest did not have such issues. Responding to the question related to be hospitalized for several times, 28.90% were

never hospitalized, 30.21% were hospitalized three times and above, 22.14% were hospitalized twice, and the rest were hospitalized once. Regarding the question about mode of treatment, 30.2% used oral hypoglycemic, 28.39% used insulin, 29.17% follow both insulin and hypoglycemic and rest used the controlled diet. To respond the question related to social support, 34.64% of the respondents believed that they got the strong social support, 33.59% of respondents felt that they have moderate social support, and the remaining 31.77% were of poor social support. Responding to the question related to the monthly average of Fasting Blood Sugar (FBS), 14.58% respondents had less than 70 mg/ dL, 22.92% had in the range of 70-140 mg/ dL, 18.49% had 140-180 mg/ dL, 17.71% respondents had 180-250 mg/dL and rest had more than 250 mg/dL. Similarly, for the monthly average of Post Prandial Blood Sugar (PPBS), 27.86% had more than 500 mg/dL, 25.26% had more than 400 mg/dL, 22.40% had more than 300 mg/dL, 9.90% had more than 200 mg/dL, and rest had more than 150 mg/dL.

Table 3: Clinical and medication profile of the respondents

Variables	Category	Frequency	Percentage (%)
Family history of diabetics	Yes	227	59.12
	No	157	40.88
Diabetes related complications	Diabetes retinopathy	97	25.26
	Diabetes neuropathy	126	32.81
	Sexual dysfunction	108	28.13
	Foot ulcer	53	13.80
Smoking	Yes	93	24.22
	No	262	68.23
	Some times	29	7.55
Alcohol drinking	Yes	83	21.61
	No	245	63.81
	Some times	56	14.58
Diabetes-related to hospitalization	Yes	273	71.09
	No	111	28.91
Number of times hospitalized	Once	72	18.75
	Twice	85	22.14
	Thrice and above	116	30.21
	Never	111	28.90
Mode of treatment	Oral hypoglycemic	116	30.2
	Insulin	109	28.39
	Both insulin and hypoglycemic	112	29.17
	Only controlled diet	47	12.24
Social support	Strong	133	34.64
	Moderate	129	33.59
	Poor	122	31.77
Fasting Blood Sugar (FBS) – Monthly Average	<70 mg/dL	56	14.58
	70-140 mg/dL	88	22.92
	140-180 mg/dL	71	18.49
	180-250 mg/dL	68	17.71
	>250 mg/dL	101	26.3

Post Prandial Blood Sugar (PPBS)- Monthly Average	>150 mg/dL	44	14.58
	>200 mg/dL	38	9.90
	>300 mg/dL	86	22.40
	>400 mg/dL	97	25.26
	>500 mg/dL	119	27.86

Source: Primary data

Based on the profile of self-care practices,
Concerning Table 4, 74.74% of the total respondents had an experience of satisfactory medication of self-care practices, and the rest 25.26% had no such satisfactory experience. To answer a question related to the controlled diets, 60.68% were satisfactory experience, and 39.32% were not so satisfactory experience. Based on physical exercise, 57.03% had satisfactory self-care practices and 42.97% did not have a good experience of self-care practices.

To respond the question related to the blood sugar monitoring, 28.13% did not have satisfactory experience of self-care practices, and the remaining 71.87% were the satisfactory experience of self-care practices. For the self-care practice related to foot care, 55.47% had a satisfactory experience, and the remaining 44.53% were not so happy for the same issue.
Overall, the average satisfaction level for the various self-care practices were 63.96% and 36.04% were not the satisfactory group.

Table 4: Profile of self-care practices by the respondents

Serial no.	Domain	Satisfactory in numbers (F)	Percentage (%)	Unsatisfactory in numbers (F)	Percentage (%)
1	Medication	287	74.74	97	25.26
2	Controlled Diet	233	60.68	151	39.32
3	Physical exercise	219	57.03	165	42.97
4	Blood sugar monitoring	276	71.87	108	28.13
5	Foot care	213	55.47	171	44.53
The overall average self-care practices			63.96		36.04

Source: Primary data

Suggestions
- ✓ There is a need to promote the awareness programs of diabetes and they are related chronic complications.
- ✓ There is a need to trace the underprivileged people and introduce a system to provide free medication, as well.
- ✓ The healthcare professionals should assist the needy people by providing possible interventions to reduce the various symptoms among the diabetics.
- ✓ The extended clinical working hours should be considered to address the issues of more and more diabetic patients.
- ✓ Steps should be initiated for more and more literacy; the uneducated patients face a lot of issues as compared to the literate ones.
- ✓ The technology-driven diagnosis helps to provide the instant status of the FBS and PPBS and this will help to create awareness among the patients, and also will lead to control the sugar level among the patients.
- ✓ Self-determination and capability to control diabetes is likewise an important way to minimize the risks related to diabetes
- ✓ There should be the constant support from the family members and society to deal with the diabetes-related issues.

Conclusion
The findings from this current study suggest that the respondents have a proper and acceptable

knowledge of diabetes. The majority of respondents have more than 5 years of diabetes experience and most of the cases have a family history of diabetes. The diabetes-related complication includes retinopathy, neuropathy, and sexual dysfunction along with foot ulcer. More than seventy percent have diabetes-related hospitalization. The monthly average of FBS and PPBS is more than forty percent and seventy-five percent, respectively. The SHGs members have a proper experience with medication, controlled diet, physical exercise, blood sugar monitoring, and foot care. The education plays an important role in self-care practices. The economic conditions, non-availability of health care services, and fear of hospitalization are further major causes of self-care avoidance. The findings of the study concerning women members of SHGs in the Jashore District, in Bangladesh, will be the additional literature on the diabetes of self-care practices.

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Authors' contributions

All authors contributed to data analysis, drafting, and revising of the paper and agreed to be responsible for all the aspects of this work.

Conflict of Interest

We have no conflict of interest to disclose.

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