

Knowledge, Attitude and Practices of Diabetic Patients about Skin Care

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ABSTRACT

Background: Diabetes is now a public health problem in our country and it is steadily increasing. Skin manifestation is frequently common in diabetics. Care of skin is a part of management, where patient's role is no less than a physician, The patients' role includes perception and practice of the patients about their skin manifestation. This cross-sectional study was, therefore, undertaken to assess the knowledge, attitude and practice of diabetic patients (respondents) about their skin care.

Methods: The study was carried out in the Department of Dermatology, National Healthcare Network, Dhaka over a period of 6 months from April to September 2009. A total of 90 diabetic patients with or without skin diseases included in the study. The level of knowledge and practice was measured on a 0-4 Likert Scale.

Results: Respondents were predominantly male (60%) with mean age being 49±11.1 years. Majority (95%) of the respondents were Muslim (95%), educated (87.7%) and middle class (83.3%). Primary and secondary level educated comprised 50% of the respondents. Over 25% was graduate and higher level educated and the rest (13.3%) illiterate. About 88% of the respondents held the view that diabetic patients were more susceptible to develop skin diseases and over 75% were aware about skin manifestations in diabetics. Although majority (98.1%) had a good knowledge about what to do in case if skin manifestation arises, less than half (45%) had knowledge about how to take care of their skin (unaware about practice). Only 36% of the respondents told that changes in skin colour should often be checked as evidence of skin manifestation (good knowledge), 31.1% told sometimes to be checked (fair knowledge) and 33.3% told never to be checked (poor knowledge). Majority of the respondents categorized pruritis (85.6%), erythema (81.1%) and impetigo (80%) as skin diseases. Pigment disorder, epidermal differentiation disorder, papules and blisters were identified by around two-thirds of the diabetics. Changes in skin pigmentation, cuts and blisters were often checked by 30% of the diabetics. Changes in red spots, swelling and sensation were often checked by 10% of the respondents. Nearly three-quarters (22%) of the respondents' knowledge about skin care was highly satisfactory in terms of Likert scale, followed by 44.4% satisfactory, 17.8% more or less satisfactory, 10% grossly dissatisfactory and 5.6% poor.

Conclusion: The study concluded that diabetic patients are aware of their skin manifestation and its different forms. They also possess good knowledge about how to take care of those manifestations. But they are usually reluctant to bring it into practice.

Key words: Knowledge, attitude, practice, diabetes and skin care.

INTRODUCTION

Diabetics face a variety of skin problems. Those with diabetes are at an increased risk for bacterial or fungal skin infection. Infection with

the bacteria *Staphylococcus*, commonly known as Staph. infection, causes styes, boils, folliculitis, and even deep infection (cellulitis), and this type of infection is even more serious in those with poor control of their diabetes (such as in those

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not following a proper diabetic diet). Fungal infections may affect the nails, body folds, genital regions, and feet. The darkening and thickening of body folds due to insulin resistance, called acanthosis nigricans, may be early symptoms of diabetes. Diabetic dermopathy, damage small blood vessels of the skin, may cause small, brown spots on the legs. Granuloma annulare are red, circular or arc-shaped lesions due to changes in the collagen of the skin.¹

The number of individuals with diagnosed diabetes mellitus has increased five-fold between 1958 and 1993. The World Health Organization estimates that the total number of people with diabetes worldwide will double to 200 million by the year 2010 with consequent increase in skin manifestation. Cutaneous manifestations of diabetes mellitus can be classified into four categories: skin diseases with strong to weak association with diabetes (necrobiosis lipoidica, diabetic dermopathy, diabetic bullae, yellow skin, eruptive xanthomas, perforating disorders, acanthosis nigricans, oral leucoplakia, lichen planus), infections (bacterial, fungal), cutaneous manifestations of diabetic complications (microangiopathy, macroangiopathy, neuropathy) and skin reactions to diabetic treatment (sulphonylureas or insulin).²

It is estimated that up to 70% of all diabetics suffer from pathologic skin changes during the course of disease. Onset can already occur in patients with prediabetes (IGT, IFG). Not only can dermatologic symptoms help identify and treat diabetes-associated skin disorders, they can also be important for the initial diagnosis of underlying disease. No skin disease is specific to diabetes mellitus. Yet, there are a number of typical skin disorders affecting patients with diabetes which present a challenge to the dermatologist as the key care-giving physician.³ Patient's role establishes the health seeking behaviors and treatment adherence.⁴ Successful implementation of diabetes management guidelines therefore, requires complete understanding of the lifestyle, beliefs and attitude of the patients being treated.⁵

Diabetes affects almost all tissues in the body, including the skin. Pharmacological management

of diabetes can lead to dermal alterations with multiple skin reactions. Higher incidence of bacterial and mycotic infections is reported in poor glycemic control. The escalating prevalence of diabetes portends serious consequences for the quality of life of diabetics, their families and communities⁶ In Bangladesh, population is increasing at an alarming rate especially in the urban areas due to migration by the rural poor. Such a rapid growth of populations in the urban area with consequent change in life-styles is associated with an increased risk of developing chronic diseases of which diabetes is the major concern.

This study intends to assess the health behavior (the knowledge, attitude and practices) of diabetic patients about their skin manifestations. The data generated from the present study might be useful for changing the health behaviour of diabetic patients about their skin care. It might also be extrapolated to develop a guideline to enrich the knowledge of the diabetic patients about their skin care.

METHODOLOGY

This cross-sectional study was carried out in the Department of Dermatology, National Healthcare Network (NHN), Mirpur, Dhaka over a period 6 months between April to September 2009. The study population were diabetic patients (type 1 or type 2 diabetics) with or without skin diseases visiting the above-mentioned place. The patients included in the study were suffering from the underlying disease for at least 1 year. The patients excluded from the study were diabetic patients on anti-hypertensive or anti-depressant treatment using mineral or vitamin supplements. The sample size, 384 was determined using the formula. $n = (Z^2 \times p \times q) / d^2$, where Z = Standard normal deviate = 1.96, p = Anticipated proportion of adequate knowledge of diabetic patients with skin disease = 0.5, $q = (1 - p) = 1 - 0.5 = 0.5$ and d = Desired accuracy = 10% of 'p' = 0.05. But due to short duration of the study period, no more than 90 patients (as respondents in the present study) were feasible to be included in the study.

The demographic variables included in the study were age, sex, religion, educational status, residence and socioeconomic status. The knowledge related variables and common skin diseases were as follows.

- Skin manifestations in DM
- Physicians informed about DM related complications
- Diabetic person more prone to skin disease
- Should a doctor be consulted in case if skin manifestation arises
- Should Self-remedy be applied in case if skin manifestation arises
- As a diabetic, should you take care of your skin
- Check for changes in skin color

A structured questionnaire containing the variables of interest was formed for evaluating knowledge and practice of the respondents about skin care. The level of knowledge was measured on a 0–4 Likert Scale, where, '0' meant for grossly dissatisfactory, '1' poor, '2' more or less satisfactory, '3' satisfactory and '4' highly satisfactory. There were a number of knowledge and practice-related questions. For each correct response score '1' and for each wrong response score '0' was assigned. All the individual scores obtained by the patients were then summed up and were divided 5 categories and was measured on Likert scale. Data were analysed using SPSS (Statistical Package for Social Sciences), versions 11.5. The test statistics used to analyse the data were descriptive statistics.

RESULT

Age distribution shows that 20% of the respondents was below 40 years, 22.2% between 40 – 50 years, 42.2% between 50 – 60 years and the remaining 15.6% 60 or > 60 years old. The mean age of the respondents was 49 ± 11.1 years and the youngest and oldest patients were 25 and 73 years respectively. Male respondents were predominant giving a male to female ratio of roughly 3:2 (Fig. 1).

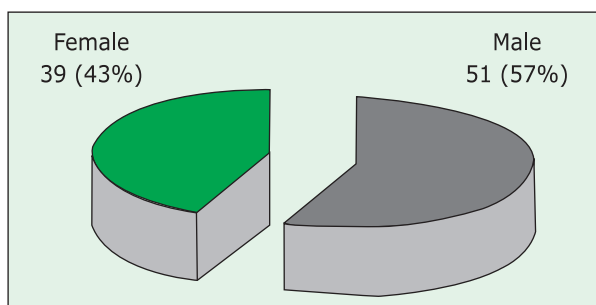


FIGURE 1 : Distribution of respondents by gender (n=90).

Majority (93.3%) of the patients was Muslim. Socioeconomic status demonstrates that 83.3% of the patients belonged to middle class, 8.9% to lower class and 7.8% to upper class (Fig. 2). About 18% of the patients was primary-level educated, 32.2% secondary, 11.1% higher secondary and 25.6% graduate and higher level educated. Twelve (13.3%) of 90 patients were illiterate.

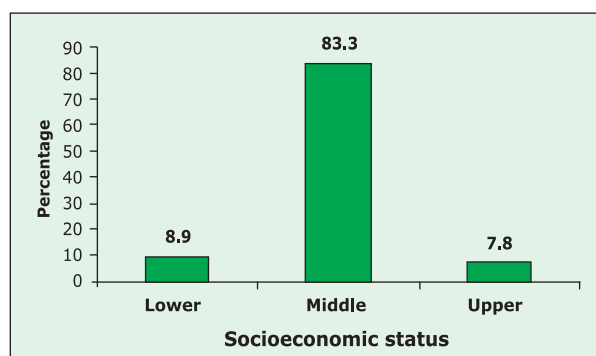


FIGURE 2: Distribution of respondents by socioeconomic status (n=90).

Assessment of knowledge about skin care revealed that majority (87.8%) of the respondents were of the opinion that diabetic patients were more prone to skin diseases, over three-quarter (75.6%) was aware about skin manifestations in diabetes, 76.7% told that their physicians informed them about diabetes related complications. Asked about what should be done in case of skin diseases, majority (98.1%) told 'to consult a doctor' and 1% 'to take self-remedy'. Over 45% of the respondents were conscious about how to take care of skin. Approximately 36% of respondents were of the opinion that diabetics should often check the

changes in their skin colour, 31.1% sometimes and 33.3% told never to be checked (Table I).

TABLE I : Respondents knowledge about skin care (n=90).

Respondents knowledge	Frequency	Percentage
Skin manifestations in DM	68	75.6
Physicians informed about DM related complications	69	76.7
Diabetic person more prone to skin disease	79	87.8
Respondents' practice in case of skin disease		
Consult a doctor	89	98.1
Self-remedy	01	1.1
As a diabetic, take care of your skin	41	45.6
Check for changes in skin color		
Often	32	35.6
Sometimes	28	31.1
Never	30	33.3

*Total will not correspond to 100%, because of multiple responses.

Respondents knowledge about common skin disease in DM:

The respondents were given the names of a number of diseases and were asked to write 'Yes' if they fell in category of skin diseases and 'No' if they did not fall into skin diseases. Majority of the respondents categorized pruritis (85.6%), erythema (81.1%) and impetigo (80%) as skin

TABLE II : Respondents knowledge about common skin disease in DM (n=90).

Common skin disease in DM	Frequency	Percentage
Pruritis	77	85.6
Pigment disorder	59	65.6
Epidermal differentiation disorder	57	63.3
Erythema	73	81.1
Papules	66	73.3
Blisters	67	74.4
Atrophy & necrobiosis	24	26.7
Cutaneous deposition disorder	26	28.9
Fungal infection of nails	14	15.6
Diabetic foot	70	77.8
Tropical ulcer	71	78.9
Diabetic dermopathy	43	47.8
Impetigo	72	80.0
Pyoderma	67	74.4
Tinea infection	65	72.2

*Total will not correspond to 100%, because of multiple responses.

diseases. Pigment disorder, epidermal differentiation disorder, papules and blisters were identified by 65.6%, 63.3%, 73.3%, and 74.4% of the respondents respectively. Other skin disorders mentioned by the respondents are illustrated in Table II.

Respondents practice of skin care:

Changes in skin pigmentation, cuts and blisters were often checked by 27.8%, 22.2% and 43.3% of the respondents respectively, Some 20% respondents checked changes in blisters often and 44.4% sometimes. Changes in red spots, swelling and sensation were often checked by 14.4%, 6.7% and 6.7% respondents respectively (Table III).

TABLE III : Respondents practice of skin care (n=90).

Respondents practice about skin care	Frequency	Percentage
Pigmentation		
Often	25	27.8
Sometimes	29	32.2
Never	36	40.0
Texture		
Often	20	22.2
Sometimes	29	32.2
Never	41	45.6
Cuts		
Often	39	43.3
Sometimes	36	40.0
Never	15	16.7
Blisters		
Often	18	20.0
Sometimes	40	44.4
Never	32	35.6
Red spots		
Often	13	14.4
Sometimes	41	45.6
Never	36	40.0
Swelling		
Often	06	6.7
Sometimes	24	26.7
Never	60	66.6
Sensation		
Often	06	6.7
Sometimes	24	26.7
Never	60	66.6

Level of knowledge about skin care in DM patients:

Based on categorization of knowledge using Likert scale, over 22% of the respondents' knowledge about skin care was highly satisfactory, followed by 44.4% satisfactory, 7.8% more or less satisfactory and 5.6% poor. Ten percent of the respondents' answer was grossly dissatisfactory (Table IV).

TABLE IV : Distribution of the respondents by level of knowledge about skin care.

Level of knowledge about skin care	Frequency	Percentage
Grossly dissatisfactory	09	10.0
Poor	05	5.6
More or less satisfactory	16	17.8
Satisfactory	40	44.4
Highly satisfactory	20	22.2

DISCUSSION

The present study aimed at evaluating the knowledge and practice of the diabetic patients about skin care included a number of knowledge and practice-related variables. The findings of the study demonstrated that mean age of the patients was 49 ± 11.1 years with a male predominance (57%). Majority of the respondents was Muslim (95%) and belonged to middle class (83.3%). Primary and secondary-level educated comprised 50% followed by graduate and higher level educated (25.6%). As majority (87%) of the respondents was educated, it is expected that the respondents would have better knowledge about skin care.

About 88% of the respondents perceived that diabetics were more prone to develop skin diseases and 75% were informed skin manifestations in diabetes from their physicians. Although majority (98.1%) had knowledge that a doctor should be consulted if skin manifestation arises, less than half (45%) had knowledge about how to take care of skin (unaware about practice). Surprisingly as practice related questions were asked, only one-third of them told that changes in skin colour should often be checked (good knowledge), one-third told sometimes to be checked (fair knowledge) and the rest one-third told never to be checked (poor knowledge).

About specific skin diseases, majority of the respondents categorized pruritis (85.6%), erythema (81.1%) and impetigo (80%) as skin diseases. Pigment disorder, epidermal differentiation disorder, papules and blisters were identified by around two-thirds of the diabetics. Changes in skin pigmentation, cuts and blisters were often checked by about one-third (30%) of the diabetics. Changes in red spots, swelling and sensation were often checked by around 10% of the respondents. Over 22% of the respondents' knowledge about skin care was highly satisfactory in terms of Likert scale (0 - 4), followed by 44.4% satisfactory, 17.8% more or less satisfactory and 5.6% poor. Ten percent of the respondents' answer was grossly dissatisfactory.

The data thus reveal that there is still inadequate awareness about the existing interventions for prevention and control of diabetes and its complications among diabetics. A hospital-based cross sectional study undertaken to assess the knowledge, attitudes and practices of type-2 diabetic patients attending a diabetic clinic found that majority of the respondents had fair or good knowledge regarding diabetes and considered diabetes to be a serious condition, with diet playing an important role in control of diabetes and were inclined to learn more about the disease.⁷ However, though a good number of respondents had constructive knowledge and attitude towards diabetes, the same was not practiced which is quite consistent with findings of the present study. With regard to practices, it was unfortunate to note that majority of the respondents were not taking extra care even if they were injured/developed skin infection, not taking precautions while travelling and not monitoring their blood sugars regularly.

Diabetes and its complications can largely be prevented if appropriate and timely measures are taken. Health education plays a key role in prevention and control of diabetes and its complications. Importantly, repeated health education/reinforcement and motivation are likely to bring about a positive change in self care practices with regard to diabetes control. Since there is a gap between knowledge, attitudes and

practices among diabetics, it is important to formulate strategies so that positive attitudes can be converted into beneficial practices. Continued medical education programs on diabetes for medical and para-medical personnel should be held regularly in order to update their knowledge regarding diabetes so that better diabetes care and education can be imparted to the patients.⁸

Demographic transition combined with urbanisation and industrialisation has resulted in drastic changes in lifestyles globally. Consequently, lifestyle related diseases like diabetes mellitus, have emerged as a major public health problem. Diabetes is characterized by a state of chronic hyperglycemia resulting from a diversity of aetiologies, environmental and genetic, acting jointly.⁸

Diabetes affects 10-16% of urban population and 5.3-6.4% of rural population and this is projected to be doubled by 2030.⁹ Self-care in the form of adherence to diet and drug regimens, blood glucose monitoring, self-administration of insulin, maintenance of optimum weight, blood pressure, recognition of skin manifestations and other signs and symptoms associated with the disease are crucial elements in secondary prevention.

The present study had some limitations which deserve mention.

- Although there were a number of knowledge-related questions in the study, the study lacked a question about what could have happened if proper skin care is not taken by diabetic patients.
- The practice-related findings obtained from the respondents were largely based on their reported information. What they actually practice was not observed.
- As the respondents participated in the study were taken from an urban centers, the findings could not be generalized to whole diabetic population.

CONCLUSION

The study concluded that diabetic patients are aware of their skin manifestation and its different forms. They also possess good knowledge about how to take care of those manifestations. But they are usually reluctant to bring it into practice. It is perhaps, they do not have the knowledge about the consequences if practice is lacking. This knowledge gap is to be addressed effectively to bring about positive changes in the behaviour of the diabetics about their skin care. The data generated from the study can be utilized to develop a guideline to enrich the knowledge of the diabetic patients about skin care. All these measures would help contain the skin diseases that result from diabetes.

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