ORIGINAL ARTICLE

Comparing knowledge of diabetes mellitus among rural and urban diabetics

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ABSTRACT: A questionnaire-based cross-sectional study was carried out to assess the awareness of diabetes mellitus among rural and urban diabetics. After analyzing the awareness level of both populations, the urban diabetics were found to be more educated about diabetes. A 25-question survey was used to judge the awareness level of diabetes mellitus. A total of 240 diabetics were surveyed, 120 each from rural and urban areas. The mean awareness among the rural population was 13 (SD± 2) correct answers out of a possible 25. Similarly, in the case of the urban diabetics the mean awareness was 18 (SD± 2) correct answers. The survey was conducted on randomly chosen diabetics belonging to Lahore and Faisalabad, (urban areas), as well as Habibabad, Haveli Koranga and Baba Kanwal (rural areas). The results emphasize the interrelation between demography and awareness of diabetes mellitus. The rural diabetics are far less knowledgeable about diabetes mellitus, its management and its complications. Thus, there is an urgent need to improve the awareness level of diabetes mellitus in rural areas. Doing so will give rise to a healthier workforce and a lessened economic burden on Pakistan.

KEYWORDS: diabetes mellitus, awareness, rural, urban.

INTRODUCTION

Diabetes definition - diabetes is a disease which is caused by the inadequate production of insulin by the body or by the body not being able to properly use the insulin that is produced thereby resulting in hyperglycaemia (high blood glucose levels) (1).

Almost 10 % of the adult population of Pakistan suffers from diabetes mellitus (1). Diabetes mellitus plays an instrumental role in causing diseases like hypertension, cardiovascular diseases, diseases of skin appendages and gangrene (2). Other serious complications include retinopathy, neuropathy, nephropathy, and lower-extremity amputations (1, 2).

Although diabetes mellitus is an incurable disease, it can be managed very well. Training in self-management is integral to the treatment of diabetes. Proper management requires patients to be aware of the nature of the disease, its risk factors, its treatment and its complications (3, 4).

Diabetes mellitus along with its complications contribute a significant amount of burden on the society. Lack of awareness has resulted in an increased number of diabetics over the years. This has resulted in a less efficient workforce and a huge economic burden on Pakistan (5). This study was conducted to assess the level of awareness among the diabetics of rural and urban populations of Pakistan. The aim of this study was to find out the areas which need more attention in terms of resources and planning.

METHODS

This cross-sectional survey was conducted in July 2004 on randomly chosen diabetic patients of both rural and urban areas. A total of 120 diabetic patients were surveyed from urban areas. The urban areas included Lahore and Faisalabad. Similarly, 120 diabetic patients from rural areas were surveyed as well. The rural areas

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included Habibabad, Haveli Koranga and Baba Kanwal (all of which lie in Punjab province).

All the subjects answered a voluntary, confidential and self administered questionnaire. It contained true/false type of questions which were aimed to assess the awareness of diabetes mellitus in relation to its definition, types, causes, symptoms, control, management, treatment, complications and its relation to other diseases. A few examples of the questions asked are as follows: 1) To the best of your knowledge is diabetes a communicable disease True / False? 2) To the best of your knowledge does diabetes have anything to do with insulin True / False? 3) To the best of your knowledge does obesity have any relation to a person developing diabetes True / False? Apart from such questions the questionnaire also gathered data about sex, level of education and socio-economic status.

All the surveys were administered in the presence of at least one of the authors. Urban diabetic patients were surveyed in hospitals, schools, universities and their residences whereas rural diabetic patients were surveyed largely at village meetings (*chopaals*).

RESULTS

The total number of rural diabetic patients surveyed was 120. The majority of the population answered 6-10 questions correctly out of a total of 25 questions asked. Similarly, 120 urban diabetic patients were asked the same 25 questions. In this case, the majority of diabetic patients gave 16-20 answers correctly as shown in Figure 1. This contrast is the main feature of this study.
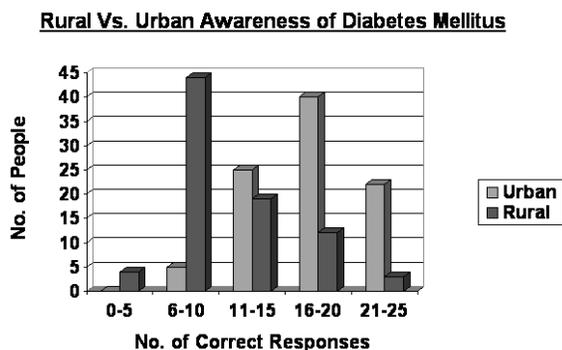

Figure 1. The distribution of the participants giving the number of correct responses.
Vertical axis: Number of diabetics
Horizontal axis: Number of correct answers
Total number of questions: 25

The mean awareness among the rural population was 13 (SD± 2) correct answers out of a possible 25. In the case of the urban diabetic patients, the mean awareness was 18 (SD± 2) correct answers.

Out of the 120 urban diabetic patients surveyed, 71 were males and 49 were female. In comparison, there were 88 males and 32 femals among the rural diabetics surveyed.

The data was also collected and tabulated (Table 1) based on the level of education of each participant. It was determined that that in the rural cohort, almost half of the participants had never gone to school at all; comparatively, a quarter of the urban participants had no formal education. The remaining breakup can be viewed in Table 1.

Table 1

	No Education	Primary (5th Grade)	Middle (8th Grade)	Matric (10th Grade)	Inter (12th Grade)	Graduate
Urban	30	15	17	23	11	24
Rural	53	20	19	11	1	16

The table shows the break up of participants from both urban and rural population in relation to their educational level.

DISCUSSION

In the present study, we have sought to determine the awareness level of both urban and rural diabetic patients about the disease. The strategy of this study was to prepare a questionnaire that would test the basic knowledge of diabetes mellitus, its definition, types, causes, symptoms, complications, management, treatment and relation to other diseases. This survey was administered to both rural and urban diabetic patients. Our study shows that the urban diabetic patients are much more educated about diabetes when compared with the rural diabetic patients.

Upon reviewing the answers to certain questions, a few more findings were discovered. One was preference to use '*desi ghee*' (a condiment high in cholesterol and saturated fatty acids) instead of cooking oil among both the rural and urban diabetic patients. Another one was the preference to consume meat instead of legumes and vegetables. One other finding which was prevalent among rural diabetic patients was their preference to consult *hakeems* (Muslim physicians) over doctors when it came to diabetes.

One factor which was observed to play a role in improving awareness was the level of education attained. A well-educated person had a much higher awareness level than a person who had received no education whatsoever. As a result, we want future

studies to look into this factor, and assess to what extent this factor plays a role.

Female diabetic patients were found to be far less aware of diabetes mellitus when compared with the males. One reason for this finding could be the low female literacy rate in Pakistan (6). Again, it emphasizes that future studies should be carried out to determine the link between education and diabetes awareness.

The link between awareness and socio-economic status is another factor that should be studied more deeply. It was observed during our study that diabetics belonging to poor socioeconomic status were less aware than those belonging to the higher class. While conducting this research, the authors have inculcated ideas on how to improve awareness about diabetes mellitus. In the short run, the authors believe that increasing the level of awareness among village elders in India and Pakistan would be a very potent strategy.

The organization in rural areas is such that all people are required to meet on a weekly or monthly basis at meetings known as *chopaals*, where the village elders dispense their experiences. In making the elders more aware, the trickling effect may make the general rural population more aware about diabetes mellitus.

Another strategy is to make the *hakeems* in the rural population more informed about the population's level of awareness, and help guide them to increase the awareness of their patients. The common rural citizen has a lot of fears concerning doctors and allopathic medication. As a result, increasing the level of awareness of the *hakeems* could to some extent help the general population as well. However, in the long run improving education standards and socioeconomic status is no doubt the cornerstone in enhancing diabetes mellitus awareness.

In conclusion, our study has provided direct evidence that urban diabetic patients are more aware than rural diabetic patients about diabetes mellitus. We have provided some discussion with regards to other factors that determine the awareness level of diabetes mellitus.

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