Improvement in Knowledge of Diabetes Among General Practitioners After a Structured Diabetes Training Program (PACE - 7)

Ranjani Harish, Uppala Padmaja, Anushree V. Mehta, Viknesh Prabu Anbalagan, Suresh Somannavar, Viswanathan Mohan

Abstract

Objective: To improve the awareness of knowledge regarding diabetes among general practitioners (GPs) in Chennai.

Method: A structured 3-day training program was conducted for general practitioners in Chennai as part of the Prevention, Awareness, Counseling and Evaluation (PACE) diabetes project. Diabetologists from our centre conducted the training program, which comprised of multiple sessions on the prevention and treatment of diabetes.

Results: We trained a total of 232 GPs. A questionnaire on diabetes was used to evaluate pre- and post-awareness levels about diabetes. The diabetes knowledge score increased from a mean score of 12.9 ± 4.0 before the training to 17.5 ± 4.0 after the training (p < 0.001). Overall, the trainees showed a 20% increase in their scores (53.3% to 72.4 %).

Conclusion: A structured diabetes education program can improve awareness about diabetes among general practitioners.

Keywords: Diabetes awareness, PACE diabetes project, General practitioner, Training, Family physicians, Prevention and control of diabetes

Introduction

A vast majority of patients with diabetes in India remain undiagnosed or managed improperly due to constraints in healthcare delivery system. An earlier study has shown low diabetes awareness in urban south India. The Prevention, Awareness, Counseling and Evaluation (PACE) Diabetes project was launched with the aim of improving awareness about diabetes among the public as well as healthcare professionals, mostly general practitioners (GPs). The results of the effect of the PACE program on the public awareness of diabetes has been reported earlier. In this article, we report on the impact of the PACE program on the knowledge of the GPs.

Methodology

The goal of this study was to train the GPs in Chennai in preventive diabetology and management of diabetes in order to treat their patients better.

Training Module: A letter of communication was sent to 295 family physicians to attend the training program conducted by us. These 295 doctors consisted of 240 GPs from general practice, 15 from industries and 40 from general hospitals. Of the 295 doctors contacted, 232
participated, comprising 193 physicians from general practice, 9 industrial medical officers and 30 GPs from general hospitals. This represented 78.6% of those invited to participate in our training program. Among the doctors who underwent training, 13% were from public sector and 87% from private practice (Table 1).

Table 1. Participation of family physicians in the GP diabetes training program

<table>
<thead>
<tr>
<th></th>
<th>No. of doctors approached</th>
<th>No. of doctors who participated</th>
<th>Response rates (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>General practice</td>
<td>240</td>
<td>193</td>
<td>80.4</td>
</tr>
<tr>
<td>Industries</td>
<td>15</td>
<td>9</td>
<td>60</td>
</tr>
<tr>
<td>General Hospital</td>
<td>40</td>
<td>30</td>
<td>75</td>
</tr>
<tr>
<td>Total</td>
<td>295</td>
<td>232</td>
<td>78.6</td>
</tr>
</tbody>
</table>

Course Details: We conducted a total of 8 rounds of awareness classes, which added up to a total 120 hours of teaching time at our centre. The course curriculum was designed by a team of senior consultant diabetologists from our centre. Consultants of various subspecialties (e.g., ophthalmologists) were also invited to participate in the program. This program covered the mode of action to be followed in screening, treatment, follow-up and education of people with diabetes. The details of the course are included in Figure 1.

Day 1 consisted of training on diagnosis and classification of diabetes including early management. Day 2 focused on role of lifestyle modification, patient education, and capillary blood testing and insulin administration techniques. Day 3 focused on diagnosis and management of complications. The training was made most interesting with the help of power point presentations, panel discussions, interactive sessions and practical activities, so that participants could gain a maximum learning experience. In addition, the simplicity of capillary blood testing was demonstrated by asking the family physicians to do a random capillary blood glucose test (RCBG) on each other.

Education Material: An educational booklet, covering diabetes screening, education, prevention and management at the primary level along with advanced therapies for diabetes care was provided. They also received copies of the same print materials that were available at our PACE counters along with the kit for Indian Diabetes Risk Score (IDRS), which would help them identify the high-risk individuals for diabetes in the community using a cost-effective and acceptable screening procedure.

![Pre-training evaluation](image1)

![Day 2](image2)

![Day 3](image3)

![Post-training evaluation](image4)

Fig. 1. Details of training program
Evaluation: A questionnaire, which included 25 items in multiple choice formats, was designed to evaluate the knowledge of the participants. The questions covered the entire spectrum of diabetes mellitus right from prevention to management of complications. 16% of the questions were based on primary prevention of diabetes; another 16% on the diagnosis and classification of diabetes; 28% on its management and the remaining 40% on secondary prevention, diagnosis and management of complications. This questionnaire was distributed at the beginning and at the end of the training sessions. Scores obtained by the participants before and after the program were compared to assess the effectiveness.

Statistical Analysis

All the data were entered into an MS excel sheet and analyzed using SPSS version 15.0. Descriptive analysis was done and student’s paired t-test was used to compare the scores of the participants before and after the test.

Results

A total of 232 physicians completed the training program. The mean score obtained by the participating physicians in the pre-training questionnaire was 53.3% which improved to 72.4% after the training program (Figure 2) and this mean difference was found to be statistically significant ($p < 0.001$). There was a marked increase in the knowledge of the physicians in questions covering screening, prevention and gestational diabetes, and significant improvements were seen in areas covering diabetes complications, their management and control.

Discussion

India currently has 62 million people with diabetes\textsuperscript{7} and this number is expected to increase to 87 million by 2025\textsuperscript{6}. The majority of patients have type 2 diabetes, which is mainly treated by the GPs. Hence, it is essential to improve the awareness and knowledge of GPs regarding diabetes. Through the present study, it is seen that a simple three days training would bring about a significant improvement in the knowledge levels of the GPs.

Despite the positive results in terms of the increase in the average percentage scores reported in this study, the actual success of such programs cannot be judged unless we have a long-term follow-up of the physicians. To know the efficacy of the training program, we need to study the target group prospectively to assess...
what positive changes these physicians have brought about in their routine clinical practice in relation to prevention and management of diabetes and its complications. A similar study had shown that the effect of such training will start declining after one year. Hence, regular reinforcement sessions need to be conducted in order to have a sustained impact on the participation.

Keeping in mind the limitations and the positive outcomes of this study, we recently started a project in collaboration with the Public Health Foundation of India, New Delhi, to train 1000 physicians per year from all over India including both public and private sector hospitals. The objective of the program is to develop core skills and need-based competencies in family physicians for the practice of evidence-based diabetes management to improve patient outcomes by establishing networks between them and existing specialized diabetes care centres in India. The course is conducted through a network of approximately 100 Certified Regional Training Centers across 57 cities in India, over a duration of one year (one Sunday every month for 12 consecutive months). This program is being regularly monitored to see its long-term impact.

GPs also commonly called as Family Physicians are the first level of contact for the people, especially in India. The reason behind this could be the comfort level they share with a family physician who has been taking care of them and their family over generations. Also, they are the ones who are more likely to be involved in the management of diabetes as they are more easily available and accessible to the common man rather than the endocrinologists or diabetes specialists. Hence, the role of GPs takes centre stage in the prevention, management and control of non-communicable diseases like diabetes. The influence of a GP over the lifestyle of the general population is highly underestimated. For the common man, a family physician can play the role of not only a doctor but also a dietician, an exercise and yoga therapist, as well as a counsellor. The impact of community level programs targeting the family physicians has already been demonstrated in similar studies conducted in other countries such as Canada, America and the Middle East. Keeping the above factors in mind, we targeted GPs in our study. In conclusion, through this study, we show improvement in the knowledge of GPs regarding diabetes through a structured education program.

Acknowledgements

We thank Ms. Parvathi, Ms. Vijaya, Mr. Raman and members of the PACE team for coordinating this program and the GPs for their participation.

References


