Effect of Counseling on Newly Diagnosed Type 2 Diabetes Mellitus Patients Visiting a Tertiary Care Hospital: A Randomized Control Trial

Sir,
The global prevalence of diabetes is rising. Timely counseling intervention about diabetes management such as diet modification, exercise, and self-care can play a vital role in enabling a patient to lead a good quality of life, and in turn delay disease progression and onset of complications.[1] Therefore, the present study was performed with the aim to evaluate the role of counseling and its impact on the knowledge, attitude, and practice (KAP) in newly diagnosed type 2 diabetes mellitus (DM) patients visiting a tertiary hospital.

A randomized clinical trial was conducted at a tertiary hospital (medical outpatient department) from August 2014 to December 2015. Newly diagnosed patients of type 2 DM in the age group of 25 to 65 years were included in the study after taking written informed consent. Patients with diagnosis duration <1 month or >4 months, those with physical deformities or severe disease other than DM and pregnant females were not included in the study.

Ninety-six individuals were randomized, and baseline data were gathered from all patients included in the study using KAP questionnaire. The questionnaire was in a language intelligible to the patient and had total 24 questions – 12 questions to assess patients’ knowledge about diabetes, its complications and management; 5 to judge their attitude; and 7 regarding practice. Maximum marks one could achieve were 42. Out of these 48 patients were given counseling (intervention group) on various aspects of diabetes including its complications, medications, diet, lifestyle modifications, exercise, danger signs and symptoms of hypoglycemia. Patients were first introduced to a video of about 15 min that contained the above-mentioned information and then, the patient was counseled for 7–15 min. At the end of the first session, leaflets on diabetes were provided to the patients. Patients were given skill-based training on how to do blood glucose monitoring by glucometer and Uri-stick. Each patient in the intervention group received at least one round of counseling. At the end of the follow-up period of 4 months, KAP questionnaire was reintroduced.

To measure the preintervention difference in KAP between both groups the means of KAP scores was derived and tested for statistical difference. Means of intervention and control group were respectively 17 ± 3.55 and 19 ± 3.56. The difference was statistically insignificant ($P = 0.43$).

Postintervention (here 2nd visit) mean of KAP score in control group was 22.95 ± 4.36. Table 1 shows the improvement in the awareness in the control group at the 2nd visit as the difference was 4.45 marks. Results of paired $t$-test applied on pre- and post-intervention data gave statistically significant difference ($P < 0.0001$).

Postintervention mean KAP score of the intervention group was 29 ± 4.65. Table 1 shows an improvement of 10.19 marks in awareness after intervention. Results of paired $t$-test applied on pre- and post-intervention data gave statistically significant difference ($P < 0.0001$).

As both groups showed improvement in KAP scores; the difference between KAP scores after intervention was measured between two groups to see if counseling made any impact on awareness. Unpaired $t$-test was used, and it showed statistically significant difference between intervention and control group ($P < 0.0001$). The relative risk (RR) of poor KAP score with respect to counseling was 0.27.

Effect of counseling in intervention group was also measured in terms of glycemic control. Before intervention, 92.5% (37/40) and 87.5% (35/40) participants had poor glycemic control in the intervention and control group, respectively. RR of poor glycemic control with respect to counseling was 0.57 ($RR = 0.57$).

Our results are in line with the results of the study conducted by Balaiah et al.[2] and by Renuga et al.[3]

Counseling led to a better increase in KAP in patients. In our study, single time counseling led to improvement in the intervention group, but whether this level of awareness would sustain over a longer duration is not clear. Study with a longer duration and regular counseling may make the long-term effects on metabolic control and awareness more evident.

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**Table 1: Pre- and post-intervention comparison of Knowledge, Attitude, and Practice score between intervention and control group**

|                      | Preintervention | Postintervention |
|----------------------|-----------------|------------------|
| **Intervention group** |                 |                  |
| KAP score median     | 17              | 29               |
| KAP score mean       | 17.88           | 28.07            |
| SD                   | 3.55            | 4.65             |
| **Control group**    |                 |                  |
| KAP score median     | 19              | 23               |
| KAP score mean       | 18.50           | 22.95            |
| KAP score mean       | 3.56            | 4.36             |

KAP: Knowledge, Attitude, and Practice, SD: Standard deviation

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Conflicts of interest
There are no conflicts of interest.

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