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Internet-Based Mentoring Program for Patients with Type 1 Diabetes

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Regardless of the type of diabetes, lifestyle modifications is an essential component of diabetes management in patients with diabetes. Maintenance of self-care behavior, including dietary habits, physical activity frequency, and self-monitoring of blood glucose (SMBG), should be started with structured diabetes education. Diabetes Self Management Education (DSME) improves metabolic control, prevents and manages complications, and maximises quality of life in a cost-effective manner [1,2]. For this reason, clinical practice guidelines on diabetes recommend that DSME must be delivered by a certified educator who has received professional training or a multidisciplinary care team [3,4].

In addition, diabetes is typically a progressive chronic metabolic disease, and chronic illnesses are usually emotionally stressful, leading to both physical and psychological fatigue [5]. Also, changing the patients' daily routines or modifying their lifestyles are not so easy, especially due to the adherence to their current habits that have lasted for a longtime. Even those that generally have self-caring behaviors are under the constant threat of severe and devastating diabetic complications or bothersome symptoms throughout their lives [5,6]. Therefore, to maintain the patients' self-care behavior, the diabetes educators need to take into account various social, emotional, and psychological factors in addition to the patients' clinical situation. Consequently, close monitoring of their adherence to previous habits, emotional support, and regular reinforcement is essential to help patients change their lifestyle and maintain it during their lifetime.

To do this, a web-based telemedicine system is a good alternative strategy to guide patients with diabetes. Undoubtedly, telemedicine delivered by health care professionals is cost-effective, time-saving, convenient, and easily accessible. Especially in Korea, more than 40 million people use internet access, corresponding to about 82.5% of the Korean population [7]. Also, telemedicine has a substantial benefit for patients in the sense that it provides more individualized recommendations in real-time.

Suh et al. [8] have recently reported a 12-week internet-based mentoring program for patients with type 1 diabetes whose glycemic control status were inadequate. Using the web-based mentoring protocol, 5 volunteer mentors guided 26 patients regarding appropriate insulin dosing, physical activity, and food intake within 48 hours of mentees' request. Mentors were either patients themselves or a parent of one who already had experiences in diabetes management, not professional health care providers or doctors.

Unfortunately, in contrast to our expectation, their glycemic control status (HbA1c) with glucose fluctuation (Average daily risk range), number of hypoglycemic episodes, and quality of life measured by Audit of Diabetes Dependent Quality of Life and Diabetes Treatment Satisfaction Questionnaire score were not improved after the mentoring program. However, they found that the mentoring program increased the frequency of SMBG. Considering their study conditions, such as long diabetes duration (about 6 years), young-aged adult (about 32 year-old) subjects, small study number, and short observation peri-

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od, we believe that emotional or psychosocial support with positive feedback were helpful in motivating patients to familiarize with SMBG.

We think that the ideal role and personal qualification of the mentors were the most important factors of this mentoring program for clinical application. Because the mentors had direct influence on patients' life and glycemic control, and they were not healthcare professionals, we suggest that the role of mentors to be confined to encouraging the patients to maintain their healthcare behaviors and provide correct information and skills that will change the patients' lifestyle. In addition, the mentors should take structured diabetes educations, especially regarding insulin dosage adjustment schedule.

We also believe that increased frequency of SBMG could lead to clinical benefits. It has been proven that a higher frequency of SMBG was associated with better metabolic control among subjects who were able to adjust insulin doses. At the same time, a SMBG frequency over 1 time per day was significantly related to higher levels of distress, worries, and depressive symptoms in non-insulin-treated patients [9]. Therefore, we must consider the appropriate frequency of SMBG suggested by mentors according to individual clinical circumstances, such as stable glycemic status, sick day, and so forth.

A recent study has shown that diabetes-related stress is significantly correlated with a longer diabetic duration and uncontrolled glycemic status [6,10]. Therefore, we think that the internet-based mentoring program would be beneficial for patients with type 1 diabetes, especially for those with longer diabetes duration or diabetic complications, in maximising the effectiveness of diabetes education. In conclusion, well-qualified, experienced, and trained mentors seem to be helpful for both the healthcare of patients with diabetes and healthcare providers.

CONFLICTS OF INTEREST

No potential conflict of interest relevant to this article was reported.

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