

Original Research Article

Application of interactive education in rural elderly diabetic patients with conversation map

Zhang Yingli^{1*}, Niu Mingyun¹, Zhang Cuiqin²

¹Department of Endocrinology, ²Outpatient Department, The Second Affiliated Hospital of Shandong First Medical University, Tai'an, Shandong, China

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***Correspondence:**

Dr. Zhang Yingli,

E-mail: zhangyingli99@126.com

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ABSTRACT

Background: The purpose of this study is to explore the effect of health education with conversation map on self-management ability of rural elderly diabetic patients.

Methods: 60 rural elderly diabetic patients in endocrinology department of a 3A hospital from January to December in 2019 were selected as the research objects. According to the parity of the last two digits of the hospitalization number, the odd number was divided into the control group and the even number was divided into the experimental group. The control group was given traditional health education and interactive education with conversation map was added to the experimental group. After 3 months of intervention, fasting blood glucose, 2 hours postprandial blood glucose, glycosylated hemoglobin and self-management behavior of the two groups were observed.

Results: The fasting blood glucose, 2h postprandial blood glucose, glycosylated hemoglobin and self-management ability of the experimental group were significantly better than those of the control group and the difference was statistically significant ($p < 0.05$).

Conclusions: The interactive education with conversation map can effectively improve the self-management ability of rural elderly diabetic patients, and then prevent the occurrence of diabetic complications.

Keywords: Rural elderly diabetic patients, Conversation map, Self-management ability

INTRODUCTION

Diabetes is a lifelong chronic disease, which is a chronic consumptive disease seriously endangering human health. There are 92.4 million patients with diabetes in China, and the prevalence rate is as high as 9.7%.¹

With the acceleration of rural urbanization and the change of life style of rural residents, the number of rural patients with diabetes is increasing year by year. The prevention and management of diabetes in rural areas is a very detailed and complex system project.² The vast majority of rural patients with diabetes are very lack of

relevant knowledge, especially the elderly diabetic patients have little knowledge about the risk and prevention of diabetes and poor self-management ability.³ How to help patients keep healthy and improve the quality of life is the main research topic of health education on diabetes.⁴

The conversation map tool is used to explore a new way of diabetes health education, which is planned by the International diabetes federation and healthy Interactions and sponsored by Lilly.⁵ Current study will apply this tool to the rural elderly patients with diabetes.

METHODS

Study type and duration

Current study was an observational study conducted from January to December in 2019.

Basic information

Sixty patients in endocrinology department of the second affiliated hospital of Shandong first medical university were selected as the research objects. According to the parity of the last two digits of the hospitalization number, the odd number was divided into the control group and the even number into the experimental group, with 30 cases in each group. In the control group, there were 25 males and 5 females, aged (63.8±14.7) years, 5 cases of high school education, accounting for 16.7%, 19 cases of junior high school education and below, accounting for 63.3%, and 6 cases of illiteracy, accounting for 20%. In the experimental group, there were 22 males and 8 females, aged (62.7±15.5) years, 8 cases of high school education level, accounting for 26.7%, 20 cases of with junior high school education level or below, accounting for 66.7%, and 2 cases of illiteracy, accounting for 6.6%. There were no significant differences in gender, age and educational level between the two groups (p>0.05).

Inclusion and exclusion criteria

An inclusion criterion for current study was; patients ≥60 years who were diagnosed according to WHO diabetes diagnosis criteria in 1999. Exclusion criteria for current

study were patients with unconsciousness, mental retardation and communication disorder.

Procedure

The control group was given individualized bedside education during hospitalization and weekly diabetes knowledge education after discharge. Based on the traditional health education, the interactive education with conversation map was added to the experimental group. This interactive education was carried out 2-3 times a week, 6-8 patients and 30 minutes each time.

An interest questionnaire was designed to divide the patients' interest in health education into five levels: very interested 5 points, interested 4 points, neutral 3 points, uninterested 2 points, very uninterested 1 point, as shown in Table 1. After the interactive education, the counsellors distributed the questionnaires and collected on the spot (Table 1).

The fasting blood glucose, 2 hours postprandial blood glucose, glycosylated hemoglobin were examined at admission and 3 months later. The summary of diabetes self care activities (SDSCA) was used to evaluate the self-management behavior, which includes a total of 6 dimensions and 13 items.⁶ Each dimension is scored separately and the higher score means the better self-management behavior. The Cronbach's α coefficient of each dimension measured by Sun Shengnan was 0.62~0.92.⁷ In current study, five dimensions except smoking were counted. The experimental group and the control group were scored at admission and 3 months respectively.

Table 1: Interest questionnaire for interactive health education with conversation map.

	Very interested	Interested	Neutral	Uninterested	Very uninterested
Education mode					
Schedule	5 points	4 points	3 points	2 points	1 point
Frequency					

Statistical analysis

The data were analyzed by SPSS 20.0 and expressed as $\bar{x} \pm s$. The t-test was used for statistical analysis.

RESULTS

302 questionnaires were sent out and 299 valid questionnaires were returned, with an effective rate of 99.0%. 191 of them were very interested, accounting for 63.8%, 45 of them were interested, accounting for 15.1%, 34 of them were neutral, accounting for 11.3%, and 26 of them were uninterested, accounting for 8.6%.

There was no significant difference between the two

groups before the intervention (p>0.05), but there was significant difference after the intervention (p<0.05). The indexes of the experimental group were better than those of the control group, as shown in (Table 2).

Before the intervention, there was no significant difference in the scores of five dimensions of SDSCA between the two groups (p>0.05). After 3 months of intervention, the foot care behavior of the control group was improved with significant difference (p<0.05), and the scores of the other four dimensions had no significant difference (p>0.05). The scores of five dimensions in the experimental group were higher than those before intervention, with significant difference (p<0.05), as shown in (Table 3).

Table 2: Comparison of the observation indexes between the two groups.

	Experimental group		Control group	
	On admission	3 months	On admission	3 months
Fasting blood glucose	15.2±3.1	8.8±1.9	14.3±3.3	9.2±1.5
2 h postprandial blood glucose	15.8±3.5	11.2±1.7	16.1±3.4	12.3±1.6
Glycosylated hemoglobin	9.6±1.5	7.9±1.2	9.4±1.5	8.3±1.2

Table 3: Comparison of the scores of SDSCA between the two groups.

	Experimental group		Control group	
	Before intervention	After intervention	Before intervention	After intervention
Diet management	3.16±0.89	4.26±0.93	3.05±0.92	3.06±0.91
Sports management	3.09±1.85	4.69±1.79	3.38±1.89	3.48±1.82
Blood glucose monitoring	0.43±0.58	1.53±0.68	0.37±0.54	0.45±0.58
Medication management	3.96±2.09	5.54±1.78	3.23±1.53	4.12±1.57
Foot care	0.92±0.93	2.57±1.08	0.78±0.81	1.28±1.07

DISCUSSION

Diabetes is a life-long disease closely related to lifestyle and behavior awareness. Prevention and control especially emphasize the changes of lifestyle and behavior and the compliance of high-risk groups to intervention.⁸ However, most of the elderly patients have low educational level, especially the elderly in rural areas. The proportion of illiterate and semi-illiterate is not low. The traditional health education based on words often makes the effect greatly reduced because the elderly can't understand it.⁹⁻¹⁰ The conversation map is intuitive, visual, popular and has unlimited requirements for participants' educational level, which is welcomed by elderly patients.¹¹ Through planned, organized and systematic educational activities, elderly patients can consciously adopt healthy behaviors and lifestyles, eliminate or reduce the risk factors, prevent diseases, promote health and improve the quality of life. Therefore, the interactive health education not only play the role of traditional education mode, but also let patients participate in it, fully mobilize the subjective initiative, improve the self-management ability, control blood sugar and reduce the occurrence of complications.

Limitations

The main limitation of the study was that existence of other diseases of the patients was not assessed. Many diabetic patients may had coexisting illness such as hypertension, dyslipidemia etc, which are potential factors that may have affected the results of the study.

CONCLUSION

The interactive health education in rural elderly diabetic patients with conversation map has significant effect, which not only greatly improves the level of self-management behavior, but also significantly reduces the levels of fasting blood glucose, 2 hours postprandial blood glucose and glycosylated hemoglobin. It

is worth being popularized.

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