Advanced Science and Technology Letters
Vol.88 (Healthcare and Nursing 2015), pp.130-134
http://dx.doi.org/10.14257/astl.2015.88.27

A study of Clinical Nurses' knowledge about Critical Practice Guideline for Diabetes Mellitus[1]

YoungHee Kim[1]

[1]Department of Nursing, Tongmyong University, Busan, 608-711, South Korea,
kyh0504@tu.ac.kr

Abstract. The purpose of this study was to investigate the effects of standardized diabetes education on in clinical nurses. This study uses a one group pretest-posttest design. The subjects were recruited by general hospital and participated after giving their written informed consent. A total of 115nurses were included in the final analysis The measurement tool of knowledge developed by Hong(2009) proceeding the study at KADNE was used. Questionnaire comprised 8 areas with a total of 40 questions. The data were analyzed using Cronbach's α, means, standard deviations, and t-test with the SPSS windows 21.0 program. The results of this study were as follow. The result of implementing the standardized education of diabetes showed that the level of diabetes knowledge was significantly raised. And the level of practical application of diabetes knowledge based on the standardized education of diabetes showed a statistically significant difference between before education and after education.

Keywords: clinical nurses, knowledge, diabetes mellitus

1 Introduction

Recently, with the increase of diabetic patients, the role of clinical nurse has become important in the care needs for the diabetic patients. It is reported to decrease the reliability of the patients on the nurses with the inconsistent cares for the diabetic patients (Hong etc, 2009). Therefore this study is to confirm the knowledge of the clinical nurses and the practical usefulness for diabetic treatment through the standardized training of nursing the diabetic patients.

This study is an one group pretest-posttest design to determine the extent of knowledge of nurses about diabetes and to examine the effect of the standardized training of diabetes on the practical application.

ISSN: 2287-1233 ASTL

2 Materials and Methods

2.1 Participants

This study was conducted with the written consents of 115 nurses who have been nursing the diabetic patients in two general hospitals located in B city.

2.2 Instruments

In this study, the measurement tool of knowledge developed by Hong(2009) proceeding the study at KADNE was used. Questionnaire comprised 8 areas with a total of 40 questions, which were measured with 1 point for a correct answer and 0 point for an incorrect answer. NPQ tool by Brett(1987) was used for the practical application measurement tool of knowledge of diabetes with 2 points for 'Always apply the knowledge of diabetes' scored, 1 points for 'Often apply the knowledge of diabetes', and 0 point for 'Not apply the knowledge of diabetes'. The Cronbach's alpha for the reliability of the research tool is .841.

2.3 Data analyses

The collected data were analyzed using the SPSS / WIN19.0 program. The general characteristic of the participants was calculated with frequency, percentage, average value and standard deviation. And the difference certification between the training on diabetes and the practical application of diabetes knowledge was calculated with t-test.

3 Results and Discussion

3.1 The Change of the DM knowledge level

The result of implementing the standardized education of diabetes mellitus(DM) showed that the DM knowledge level of 30.39±2.78 points before education was raised to 31.45±3.33 points after education (t=2.19, p=.032). In the sub-questions, 5.21±1.20 points of "Diagnosis and examination" before education was raised to 5.21 ± 1.20 points after education (t = 2.36, p = .022), 4.25±8.9 points of "Diet therapy" before education was significantly raised to 4.86±4.0 points after education (t=4.44, p<.001). In Exercise therapy, 2.48±.69 points before education was raised to 2.71±.53 points after education (t=2.14, p=.036). In oral pharmacotherapy, 3.16±.78 points to 3.46±.77 points (t=2.21, p=.031). And in insulin medication, 2.70±.86 points to 3.07±.81 points (t=2.71, p=.009). (Table 1)

Table 1. Change of DM knowledge level

classification	pre-test	post-test	t	p
	M±SD	M±SD		
Pothological physiology	2.43±6.28	2.37±.70	..48	.635
Diagnosis & examination	5.21±1.20	5.70±1.02	2.36	.022*
Diet therapy	4.25±.90	**4.86±.40**	**4.44**	.000*
Exercise therapy	2.48±.69	2.71±.53	2.14	.036*
Oral phamacotherapy	3.16±.78	3.45±.66	2.21	.031*
Insulin medication	2.70±.85	3.07±.81	2.71	.009*
Manage complication	7.89±1.11	7.59±1.00	1.60	.114
Special treatment	2.27±.99	**4.86±.40**	.92	.360
total	30.39±2.71	31.45±3.28	2.19	.032*

* $p < .05$

3.2 The change of practical application of the DM knowledge

The result of applying the education program for diabetes mellitus(DM) showed that 49.12±11.73 points of the practical usefulness of diabetes knowledge before education was significantly raised to 53.07±11.35 point after education (t=2.98, p=.004). In the sub-questions, 4.57±2.44 points before education was significantly different from 5.34±2.37 points after education in the oral pharmacotherapy (t=2.24, p=.029) (Table 2).

Table 2. Change of practical application of DM knowledge

classification	pre-test	post-test	t	p
	M±SD	M±SD		
Pothological physiology	3.55±1.62	3.82±1.75	.95	.346
Diagnosis & examination	8.89±2.73	9.73±2.91	1.81	.076
Diet therapy	3.98±1.05	4.41±1.15	1.93	.059
Exercise therapy	2.34±.81	2.43±.82	.63	.527

Oral phamacotherapy	4.57±2.44	5.34±2.37	2.24	.029*
Insulin medication	4.88±1.87	5.30±1.90	1.51	.136
Manage complication	13.84±3.53	13.32±3.23	1.26	.212
Special treatment	2.21±1.02	1.93±1.12	1.62	.110
total	49.13±1173	53.07±11.34	2.98	.004*

* $p < .05$

4 Conclusion

The results of research are as follows.

Firstly, the result of implementing the standardized education of diabetes showed that the level of diabetes knowledge was significantly raised. In the sub-questions, the level of diabetes knowledge was significantly changed in the areas of "Diagnosis and medical examination", "diet therapy", "exercise therapy", "Oral pharmacotherapy", and "Insulin medication".

Secondly, the level of practical application of diabetes knowledge based on the standardized education of diabetes showed a statistically significant difference between before education and after education (t=2.98, p=.004). In the sub-questions, "Oral pharmacotherapy" showed a statistically significant difference, but "Pothological physiology and classification", "Diagnosis and medical examination", "Diet therapy", "Exercise therapy", and "Insulin medication". showed no statistically significant difference.

In conclusion, the standardized education of diabetes was shown to have a significant effect on the diabetes knowledge level of the nurses and their practical application, which is considered necessary to develop the specific and specialized educational program for diabetes rather than the general programs and to do the regularly repeated education in the on-the-job education, the education for all members by the ward of hospital, and the refresher training including the latest diabetes knowledge.

References

1. Korean Diabetes Association,: Clinical Practice Guideline for Diatbetes Mellitus 2011. MMK communication. Seoul; (2011)
2. Hong, M. H., Yoo, J. W., Kim, S. A., Lee, T. R., Roh, N. R., Park, J. E., & Gu, M. O.,: Knowledge and Diffusion of Knowledge for Nursing care of Patients with Diabetes Mellitus among Clinical Nurses. Journal of Korean Clinical Nursing Research. 15(3), 61— 74 (2009)
3. Drass, J. A., Muir-Nash, J., Boykin, P. C., Turek, J. M., & Baker, K. L.,: Perceived and actual level of knowledgr of diabetes mellitus among nurses. Diabetes Care. 12(5), 351-356 (1989)

4. Brett, J. L.: Use of nursing practice research findings. Nursing Research. 36(6) 344--349 (1987).
5. El-Deirawi, K. M., & Zuraikaf, N.: Registered Nurses' actual and perceived knowledge of diabetes mellitus. Journal for Nurses in Staff Development. 17(1), 5--11 (2001)
6. Shin, J. S., & Park, C. J.: Research into Clinical Nurses' Knowledge, Importance and Perception of Diabetes Mellitus. The Journal korean academic society of nursing education. 8(1), 95--107 (2002)
7. Lee, B. J., & Gu. M. O.: Comparison of the Effects between Positive Message and Negative Message in Diabetes Mellitus Education. Diabetes & Metabolism Journal. 33(4), 344--352 (2009)

