Intensive Education Program by Community Pharmacists to Improve Adherence to Self-Management in Type 2 Diabetes

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Background:

Type 2 diabetes is deeply associated with lifestyle habits; however there is little evidence on the impact of community pharmacists' educational intervention on diabetes care in Japan.

Objectives:

To assess the impact of intensive education by Japanese community pharmacists on the adherence of patients with type 2 diabetes.

Methods (Fig.1, Table 1):

Intervention

-Education provided by community pharmacists

Design

-Randomized controlled study

-Control: routine pharmaceutical care

-Intervention : above + intensive education

Settings

-Community pharmacies were randomly allocated to each arm.

-Participating pharmacists underwent training to minimize inter-pharmacist difference in patient assessment and intervention.

-Inclusion criteria: adult type 2 diabetes patients receiving drugs dispensed from the pharmacy

Main outcome measures

-Endpoint: change in patient adherence score before and after 3 months of intervention. Patients were evaluated using scoring sheet, which consists of 6 sections (max.5 points each):

-diabetes therapy

HbA1c

Complication

Nutrition/exercise

-diabetes pharmacotherapy

Compliance

Ability to manage his/her own drugs

Comprehension of therapy

-Statistical analysis: The changes in the scores were evaluated by Kruskal-Wallis tests.

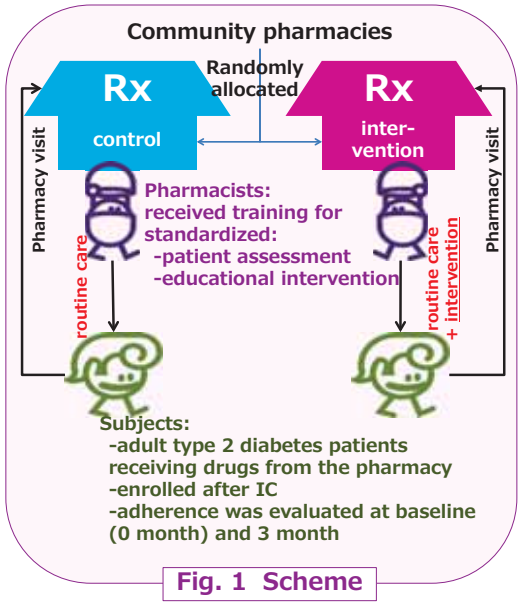

Fig. 1 Scheme

Table 1 Timeline

	0 month	Intermittent visits	3 month
Routine care			
Update patient records	○	○	○
Provide drug information sheets	○	○	○
Patient assessment			
Informed Consent	★		
Patient info	★		
Adherence [diabetes therapy]	★		★
Adherence [diabetes pharmacotherapy]	★		★
Intervention diabetes therapy	◎	◎	◎
Intervention diabetes pharmacotherapy	◎	◎	◎

○ : both intervention arm and control arm
◎ : only intervention arm
★ : evaluation

Results:

-38 subjects (12 in the control arm, 26 in the intervention arm) were enrolled and followed-up until 3 months.

-No significant difference was observed in subject characteristics between the two arms (**Table 2**).

-Baseline scores were lower for diabetes therapy compared to diabetes pharmacotherapy in both arms, but did not differ between the two arms.

- Mean scores of the subtotal changes in adherence of diabetes therapy improved more in the intervention group than the control group (1.92 vs.0.42). Differences were significant in nutrition/exercise (0.73 vs.0.17), and HbA1c (0.65 vs.0.17). (**Fig. 2**)

Conclusions:

-This randomized controlled study indicated that educational intervention provided by community pharmacists can improve patient's adherence in diabetes care.

-Further research including measurement of clinical outcomes would be required to lead conclusive evidence of potential for community pharmacists to contribute to diabetes care beyond provision of pharmacotherapy.

Conflict of interest:

All authors declare no conflict of interest.

Acknowledgments :

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This study has been approved by the ethical committee of the University of Tokyo, SAA Research Institute, and Health Outcome Research Institute according to the Japanese Ethical Guidelines for Epidemiological Research.

Table 2 Subject characteristics

	Control (n=12)	Intervention (n=26)
Age	72.1 [10.4]	67.3 [10.9]
Sex (% of men)	33%	62%
History of diabetes [yr]	5 *1	7.9 [6.6] *2
History of diabetes pharmacotherapy [yr]	3 [2.8] *3	7.1 [5.6] *4

*1n=2 *2n=9 *3n=3 *4n10

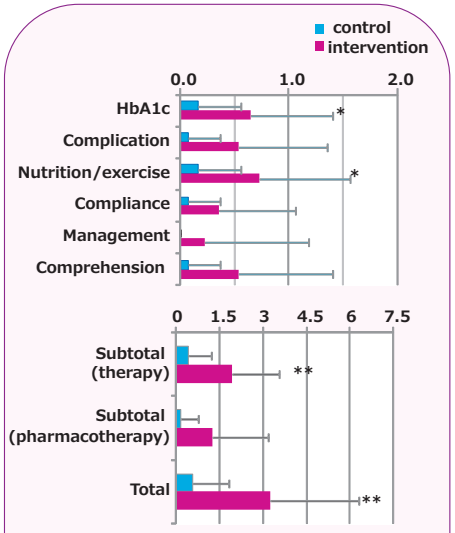

Fig. 2 Change in patient adherence score (3 months)
(*:p<0.05, **:p<0.01)