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## **Impact of structured patient education on complications and understanding levels in peritoneal dialysis patients**

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**Objectives :** Peritoneal dialysis (PD) patients independently perform dialysis, requiring effective self-management to minimize complications. Patient education is crucial for successful PD care. This study evaluated whether structured education reduces complications and the effect increases according to the frequency.

**Methods :** A pilot homecare program for PD patients was conducted across 83 hospitals by the Health Insurance Review and Assessment Service (HIRA). The program provided two educational interventions: detailed education regarding PD complications delivered by physicians (IB510; 4–6 times/year), and supportive nursing education including phone consultations (IB520; ~12 times/year). Data were collected based on patient management-fee forms (IB530), which were used to evaluate PD-related complications, submitted to the HIRA database from December 16, 2019, to June 30, 2021. A McNemar test compared complication rates between pre- and post-education. Patients were also stratified according to the frequency of education (low and high), and patients' understanding were compared between groups.

**Results :** IB510 and IB520 were provided to 1,370 and 2,670 patients, respectively, with average of 2.35 and 4.01 sessions. Both educations significantly reduced patient complaints, including dyspnea, edema, vomiting, abdominal pain, and constipation, as well as complications such as catheter-related issues, discharge from exit site, incorrect dialysate infusion/drainage, and outpatient or emergency visits. Regarding the frequency of IB510, the high-frequency subgroup (n=503; 4.00±0.81 sessions) had significantly higher scores in patient understanding reported from nurses (grade 0-4) compared to the low-frequency subgroup (n=867; 1.40±0.49 sessions; 3.79±0.54 vs. 3.48±0.76, p<0.001). Similarly, in IB520, the high-frequency subgroup (n=1,021; 6.84±1.59 sessions) had higher understanding scores compared to the low-frequency subgroup (n=1,649; 2.26±1.08 sessions; 3.67±0.72 vs. 3.51±0.66, p<0.001).

**Conclusions :** Structured education significantly reduced PD complications. Increasing education frequency enhanced patient understanding, emphasizing the importance of regular education for improved PD management at home.



## Tables.png

Table 1. Baseline Characteristics

	Education consulting fee 1 (IB510) (n=1,370)	Education consulting fee 2 (IB520) (n=2,670)
Age (year)	52.3 ± 13.5	53.4 ± 13.7
Male (n, %)	757 (55.3)	1,462 (54.8)
Total Number of education consulting (n)	3,223	10,714
Hospital type (n)		
Tertiary general hospital	2,546	8,686
General hospital	677	2,028
Educator (n, %)		
Physician	1,370 (100%)	95 (3.6%)
Nurse		2,575 (96.4%)
Education (n, %)		
Patient-Centered Education	1,115 (81.6%)	1,934 (73.1%)
Family-Oriented Education	252 (18.4%)	713 (26.9%)
Educational materials provision (n, %)	1,127 (82.3%)	2,264 (84.8%)
Number of education consulting	2.35 ± 1.40	4.01 ± 2.57
Points of education understanding	3.79 ± 0.69	3.57 ± 0.69

Table 2. Comparison of Compliance and Outcome Variables between High-Frequency and Low-Frequency Education Groups of IB510

	Total (n=1,370)	High (n=503)	Low (n=867)	P value
Age (year)	52.27 ± 13.46	53.69 ± 12.01	51.45 ± 14.18	0.002
Male (n, %)	757 (55.26)	289 (57.46)	468 (53.98)	0.234
Number of education consulting	2.35 ± 1.40	4.00 ± 0.81	1.40 ± 0.49	<0.001
Points of education understanding	3.79 ± 0.69	3.79 ± 0.54	3.48 ± 0.76	<0.001
Education (n, %)				
Patient-Centered Education	1,115 (81.57)	380 (76.00)	735 (84.78)	<0.001
Family-Oriented Education	252 (18.43)	120 (24.00)	132 (15.22)	
Educational materials provision (n, %)	1,127 (82.32)	440 (87.48)	687 (79.33)	<0.001

Table 3. Comparison of Compliance and Outcome Variables between High-Frequency and Low-Frequency Education Groups of IB520

	Total (n=2,670)	High (n=1,021)	Low (n=1,649)	P value
Age (year)	53.35 (13.65)	51.91 (13.06)	54.24 (13.94)	<0.001
Male (n, %)	1,462 (54.76)	531 (52.01)	931 (56.46)	0.027
Educator (n, %)				
Physician	95 (3.56)	35 (3.43)	60 (3.64)	0.859
Nurse	2,575 (96.44)	986 (96.57)	1,589 (96.36)	
Number of education consulting	4.01 ± 2.57	6.84 ± 1.59	2.26 ± 1.08	<0.001
Points of education understanding	3.57 ± 0.69	3.67 ± 0.72	3.51 ± 0.66	<0.001
Education (n, %)				
Patient-Centered Education	1,934 (73.06)	724 (71.83)	1,210 (73.83)	0.280
Family-Oriented Education	713 (26.94)	284 (28.17)	429 (26.17)	
Educational materials provision (n, %)	2,264 (84.79)	930 (91.09)	1,334 (80.90)	<0.001

## Tables.png



Figure 1. Comparison of complications and problems before and after education consulting IB510.

\*  $P < 0.05$ .

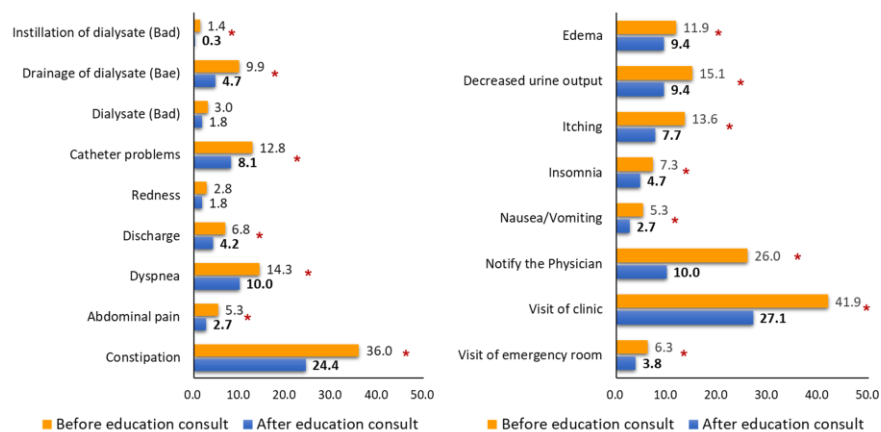


Figure 2. Comparison of complications and problems before and after education consulting IB520.

\*  $P < 0.05$ .

