

Home Visits Help to Identify Palliative Care Needs for Geriatric Rural In-center Hemodialysis Patients

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Background

Patients under dialysis, especially elderly and those with multiple comorbidities, may have a high symptom burden and a shortened life expectancy. During the shared-decision making process, functional status and quality of life are important issues. However, patients may exhibit different functional activity when they are presented to the health-care facility.

In contrast to peritoneal dialysis or home hemodialysis, the role of home visit for in-center hemodialysis patients is rarely evaluated. Herein we report the value of home visit for geriatric patients receiving in-center hemodialysis in rural areas.

Materials and Methods

This study was carried out in the a community hospital in northern Taiwan. We invited all patients older than 65 years old with end-stage renal disease undergoing hemodialysis in the dialysis unit between October 2012 and July 2014.

For each visit, the team included a nephrologist, a physical therapist, and at least one nurse. We assessed patients' general well-being and performance in activities of daily living at home. We used Karnofsky performance score (KPS), Eastern Cooperative Oncology Group (ECOG) system function score, and Barthel index as tools for evaluation.

Potential palliative need was determined by clinical medical history, general functional status, patient's preference, quality of life, and contextual features.

Results

- Among 39 invited patients, 37 patients agreed with our home visit (Figure 1). Mean age at the time of home visit was 74.4 ± 6.2 years, and 21 (56.8%) of them were women. Other demographic data are list in Table 1.
- Their mean KPS assessed at home was 70.0 ± 22.6 , which was significantly higher than the score assessed at the hemodialysis unit before (62.7 ± 12.8 , $P=0.007$).
- The mean ECOG score was 1.54 ± 0.96 , and the mean Barthel index was 78.2 ± 29.7 .
- After home visit, the team identified 12 patients (32.4%) who should be further evaluated for palliative care needs.
- The mean age was older, the average serum creatinine levels were lower in patients with potential palliative care needs (Table 1).
- The mean KPS, ECOG score, and Barthel index were significantly lower in patients with potential palliative care needs (Figure 2).

Figure 1. Geographic distribution of home visit.

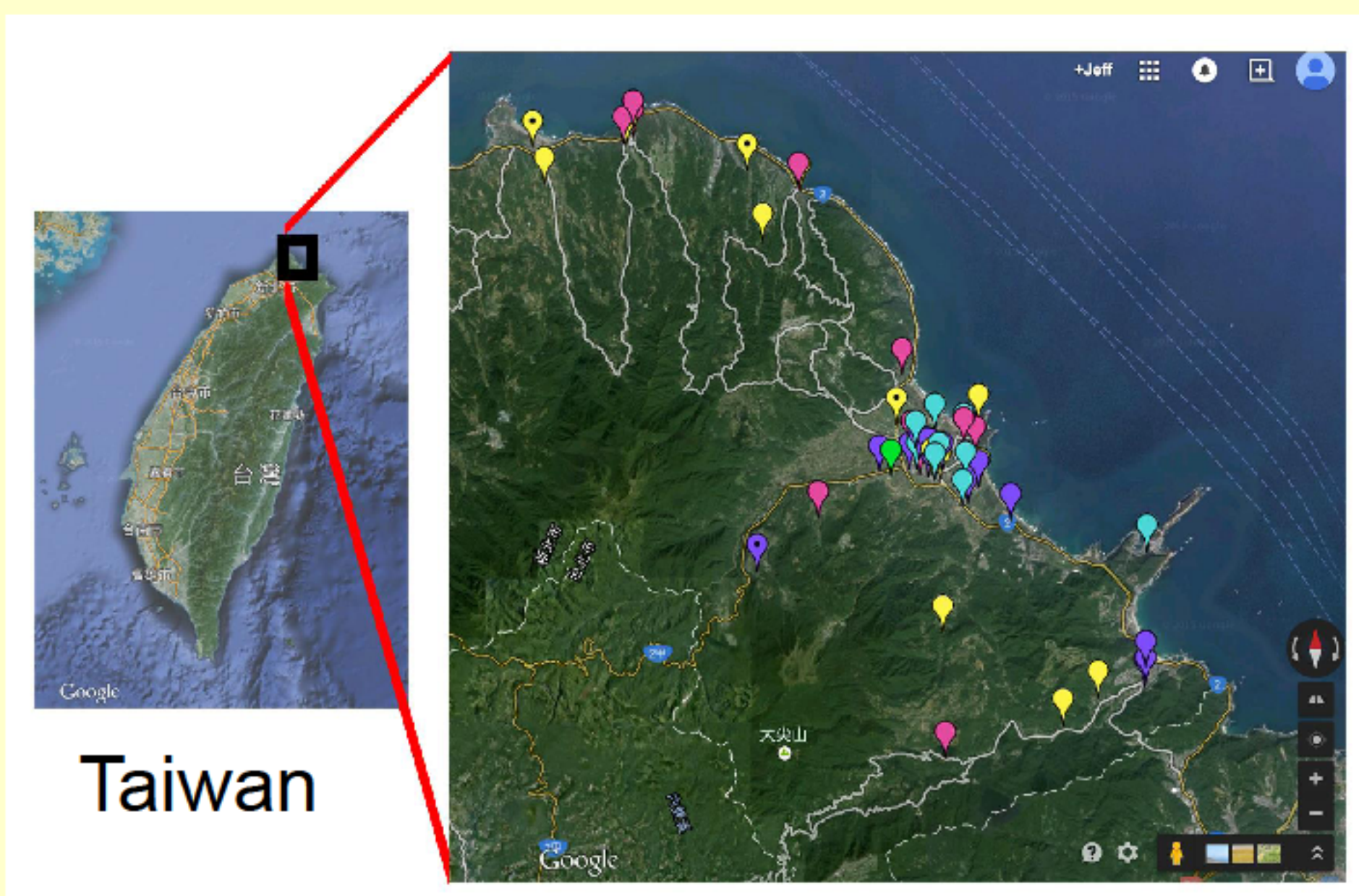
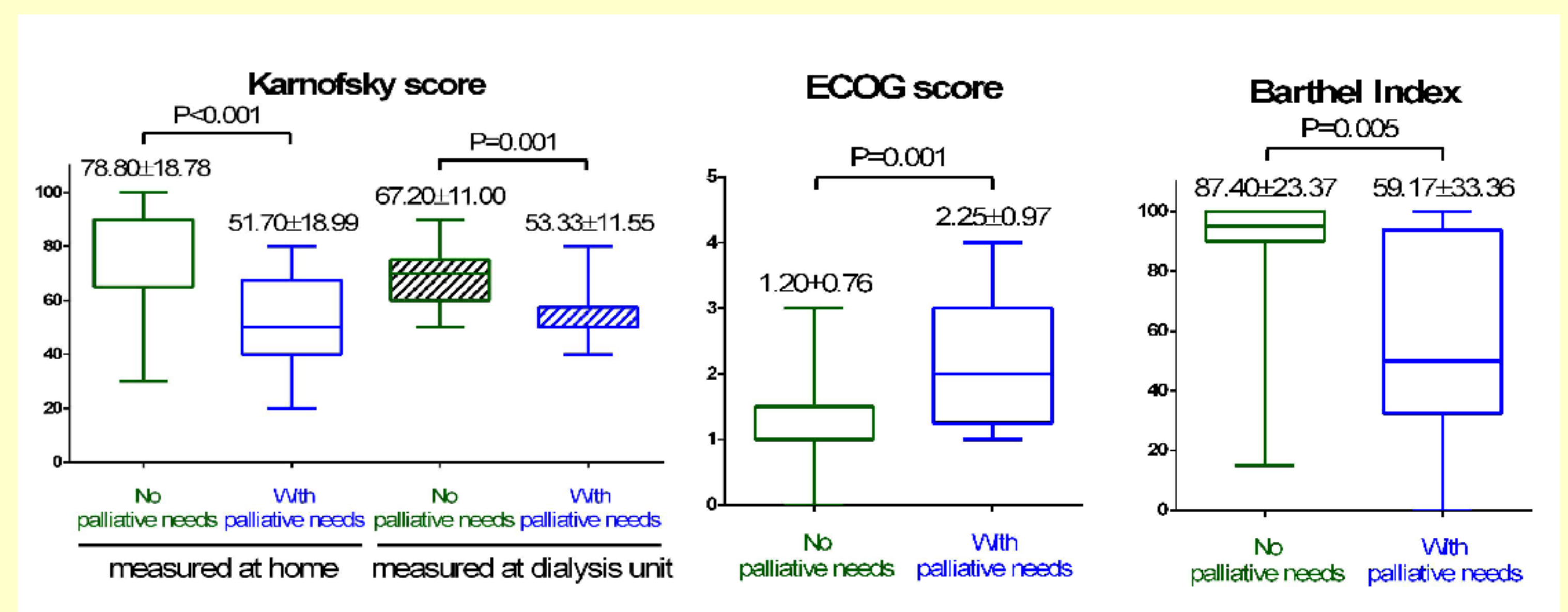


Table 1. Demographics and clinical characteristics.

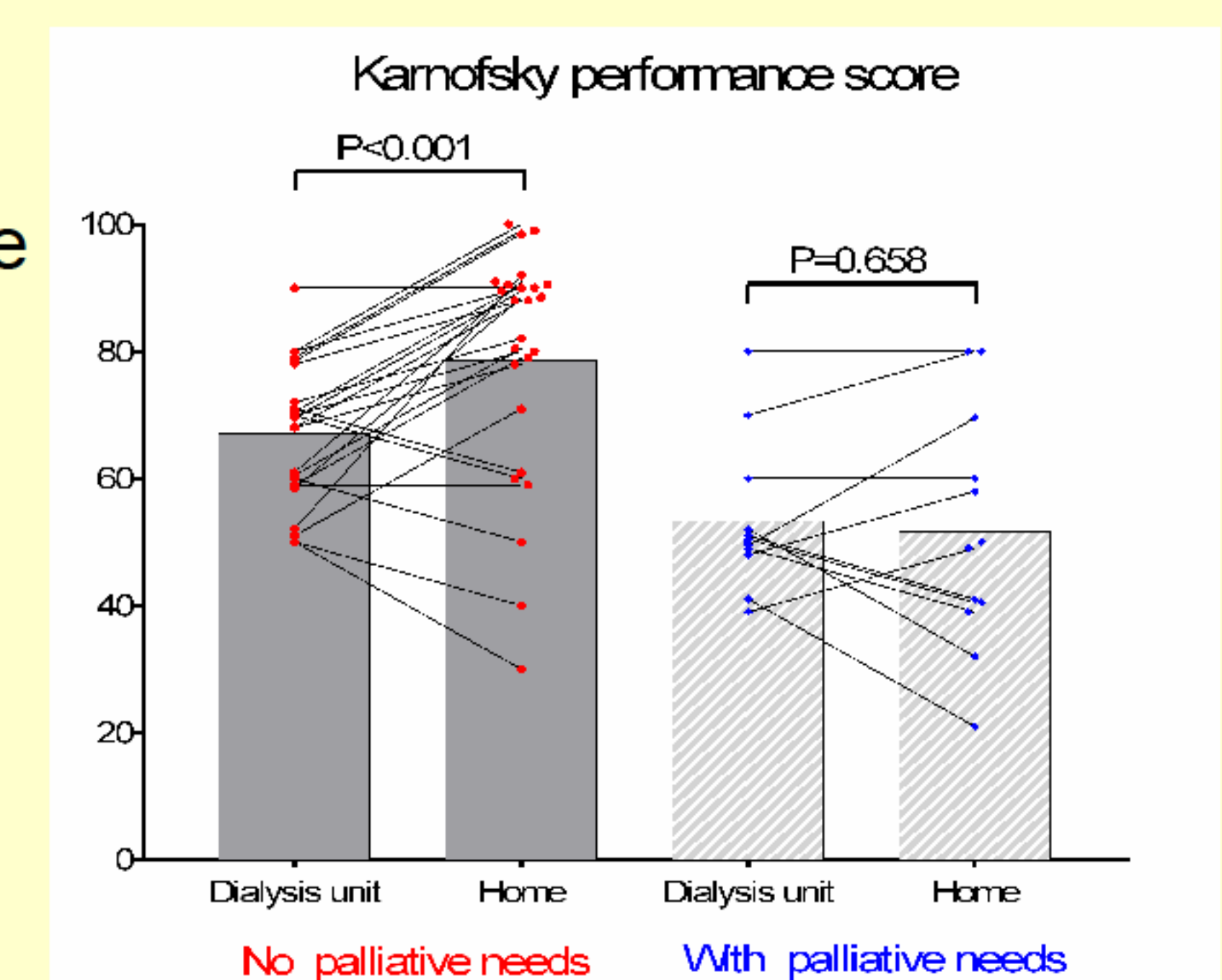
| Characteristic | No palliative needs (n=25) | Palliative needs (n=12) | P ^a |
|--|----------------------------|-------------------------|----------------|
| Age (years) | 72.92 (5.51) | 77.54 (6.66) | 0.0319 |
| Gender, women (%) | 13 (52.0) | 8 (66.67) | 0.399 |
| Time on RRT (months) | 34.38 (29.89) | 37.76 (34.74) | 0.7621 |
| Vascular access (%) | | | 0.2217 |
| fistula | 15 (60.0) | 3 (25.0) | |
| graft | 4 (16.0) | 6 (50.0) | |
| catheter | 6 (24.0) | 3 (25.0) | |
| Diabetes (%) | 9 (36.0) | 8 (66.67) | 0.157 |
| Hypertension (%) | 22 (80.0) | 12 (100.0) | 0.537 |
| Coronary artery disease (%) | 8 (32.0) | 5 (41.67) | 0.716 |
| Malignancy (%) | 5 (20) | 0 | 0.152 |
| Recent active infection (%) ^b | 4 (16.0) | 4 (33.33) | 0.394 |
| Recent hospitalization (%) ^c | 6 (24.0) | 6 (50.0) | 0.114 |
| WBC count (1000 cells/mm ³) | 6.91 (2.46) | 6.49 (2.32) | 0.6269 |
| Hemoglobin (g/dL) | 9.89 (1.32) | 9.02 (1.68) | 0.0927 |
| Platelet count (1000 cells/mm ³) | 199.04 (66.12) | 168.17 (89.54) | 0.2446 |
| Albumin (g/dL) | 3.84 (0.43) | 3.54 (0.56) | 0.0807 |
| GOT (unit/L) | 18.68 (6.30) | 23.92 (15.71) | 0.1542 |
| GPT (unit/L) | 15.68 (11.94) | 20.17 (21.32) | 0.4156 |
| Alkaline-P (unit/L) | 73.36 (38.16) | 90.92 (63.03) | 0.2988 |
| Total cholesterol (mg/dL) | 176.68 (61.30) | 150.73 (40.90) | 0.2095 |
| Triglyceride (mg/dL) | 141.16 (85.08) | 139.91 (93.17) | 0.9687 |
| Fasting glucose (mg/dL) | 116.00 (58.32) | 107.83 (48.65) | 0.6776 |
| Blood urea nitrogen (mg/dL) | 79.28 (20.65) | 75.93 (23.86) | 0.6627 |
| Serum creatinine (mg/dL) | 10.36 (2.24) | 8.55 (2.40) | 0.0307 |
| Na (mmole/L) | 135.32 (3.97) | 135.58 (6.13) | 0.8755 |
| K (mmole/L) | 4.66 (0.73) | 4.84 (1.13) | 0.5679 |
| Ca (mg/dL) | 8.81 (0.65) | 8.95 (0.81) | 0.5786 |
| P (mg/dL) | 4.78 (1.43) | 4.90 (1.10) | 0.8058 |
| Single pool Kt/V ^{1b} | 1.50 (0.27) | 1.43 (0.24) | 0.3894 |
| nPCR (g/kgBW/day) | 1.09 (0.25) | 1.14 (0.35) | 0.6352 |
| TSAT (%) | 25.54 (7.73) | 29.11 (19.02) | 0.4236 |
| Ferritin (ng/mL) | 425.54 (314.14) | 719.09 (1033.29) | 0.199 |
| Intact PTH (pg/mL) | 312.72 (333.89) | 383.80 (577.86) | 0.6434 |

Figure 2. Functional status by groups.



- Further analysis showed that the KPS assessed at hemodialysis unit was underestimated in patients without potential palliative care needs ($P<0.001$), but not in patients with needs ($P=0.658$). (Figure 3)

Figure 3. Difference of KPS measured at the dialysis unit and at home by groups.



Conclusion

We demonstrated that home visit correctly assess patients' functional performance in activities of daily living. It helps to identify patients with palliative care needs.

