Supplemental File 1. Hyperkalemia Management KAP Questionnaire

Section 1: Socio-demographic and clinical characteristics

The interviewer completes this section based on patient report and medical records.

Item	Response options
1. Age (years)	____ (record exact) → categorized later as <50 / ≥50
2. Gender	□ Male □ Female
3. Residence	□ Urban □ Rural
4. Educational level	□ Illiterate □ Primary □ Secondary □ University or higher
5. Occupation	□ Employed □ Unemployed
6. Marital status	□ Married □ Unmarried □ Widowed
7. Duration of kidney disease	□ <1 year □ 1-5 years □ >5 years
8. Hemodialysis status	□ On hemodialysis □ Not on hemodialysis
9. Duration of dialysis	□ <1 year □ 1-5 years □ >5 years
10. Comorbidities (multiple allowed)	□ Hypertension □ Heart disease □ Diabetes mellitus □ Other: ____
11. Regular medication use	□ Yes □ No
12. History of kidney removal (nephrectomy)	□ Yes □ No

Section 2: Hyperkalemia Knowledge

Instructions to interviewer: Read each statement aloud. Ask the patient to answer “True”, “False”, or “Don’t know”. Mark correct answers as “Correct” if the patient’s answer matches the correct response (shown in parentheses). “Don’t know” is coded as incorrect.

Item	Statement (Correct answer)	Patient response	Correct?
K1	High potassium levels can cause dangerous heart rhythm problems. (True)	□ True □ False □ Don’t know	□ Yes □ No
K2	Bananas are high in potassium. (True)	□ True □ False □ Don’t know	□ Yes □ No

K3	Dried fruits (e.g., raisins, dates, figs) contain high potassium. (True)	□ True □ False □ Don't know	□ Yes □ No
K4	Potatoes can be boiled to reduce their potassium content. (True)	□ True □ False □ Don't know	□ Yes □ No
K5	Some diuretics ("water pills") help lower potassium levels. (True)	□ True □ False □ Don't know	□ Yes □ No
K6	Tomatoes and tomato sauce are low-potassium foods. (False)	□ True □ False □ Don't know	□ Yes □ No
K7	Yogurt and milk are high in potassium. (True)	□ True □ False □ Don't know	□ Yes □ No
K8	Eating too many high-potassium foods can be dangerous even if you feel well. (True)	□ True □ False □ Don't know	□ Yes □ No
K9	Hemodialysis removes all excess potassium from the body. (False)	□ True □ False □ Don't know	□ Yes □ No
K10	Potassium levels should be checked at least once a month. (True)	□ True □ False □ Don't know	□ Yes □ No
K11	Cooking vegetables in large amounts of water (leaching) reduces potassium. (True)	□ True □ False □ Don't know	□ Yes □ No
K12	Nuts and seeds are generally low in potassium. (False)	□ True □ False □ Don't know	□ Yes □ No
K13	Potassium binders are medications that help remove potassium from the gut. (True)	□ True □ False □ Don't know	□ Yes □ No
K14	Drinking herbal teas (e.g., chamomile, mint) is safe for potassium control. (False)	□ True □ False □ Don't know	□ Yes □ No

Section 3: Attitudes toward hyperkalemia management

Instructions: Read each statement. Ask the patient to indicate agreement on a 3-point scale: Disagree, Neutral, Agree. Mark the chosen box.

Item	Statement	Disagree (1)	Neutral (2)	Agree (3)
A1	I believe that controlling my potassium level is very important for my health.	□	□	□
A2	I am confident that I can follow a low-potassium diet.	□	□	□

A3	I think that avoiding high-potassium foods is too difficult.	□	□	□
A4	I trust my doctors and nurses when they give advice about potassium.	□	□	□
A5	I feel anxious about the risk of high potassium.	□	□	□
A6	I believe that small changes in my diet can make a big difference.	□	□	□
A7	I am willing to ask family members to help me prepare low-potassium meals.	□	□	□
A8	I think that checking potassium levels regularly is unnecessary. (reverse-coded)	□	□	□
A9	I feel motivated to learn more about potassium-safe foods.	□	□	□
A10	I believe that my current eating habits are already safe for potassium.	□	□	□
A11	I worry that following a low-potassium diet will make me lose weight or feel weak.	□	□	□
A12	I think that the hospital should provide more practical cooking advice.	□	□	□

Note: For analysis, item A8 is reverse-coded (Disagree→3, Neutral→2, Agree→1).

Section 4: Self-reported practices for potassium management

Instructions: Ask how often the patient performs each behavior. Response options: Never (1), Sometimes (2), Always (3).

Item	Behavior	Never (1)	Sometimes (2)	Always (3)
P1	I avoid eating bananas, dates, or dried fruits.	□	□	□
P2	I boil vegetables in a large amount of water and throw away the water before eating.	□	□	□
P3	I check food labels for potassium content when shopping.	□	□	□
P4	I take all my prescribed medications regularly (including binders if prescribed).	□	□	□

P5	I record what I eat in a food diary or notebook.	□	□	□
P6	I prepare my own meals to control potassium content.	□	□	□
P7	I ask about the potassium content of dishes when eating at a friend's home.	□	□	□
P8	I drink only the amount of fluid recommended by my doctor.	□	□	□
P9	I remind family members not to add high-potassium ingredients to shared meals.	□	□	□
P10	I use a low-potassium salt substitute (e.g., potassium-free salt).	□	□	□
P11	I ask my nurse or doctor about my latest potassium level.	□	□	□
P12	I follow the dietary advice for dialysis patients even when I feel hungry or tired.	□	□	□

Supplementary Table S1. Item-Level Knowledge Responses (n = 246)

Item	Statement (Correct answer)	Correct, n (%)
K1	High potassium levels can cause dangerous heart rhythm problems (True)	189 (76.8)
K2	Bananas are high in potassium (True)	201 (81.7)
K3	Dried fruits contain high potassium (True)	91 (37.0)
K4	Boiling potatoes reduces potassium content (True)	98 (39.8)
K5	Some diuretics help lower potassium levels (True)	53 (21.5)
K6	Tomatoes are low-potassium foods (False)	112 (45.5)
K7	Yogurt and milk are high in potassium (True)	134 (54.5)
K8	High-potassium foods can be dangerous even without symptoms (True)	173 (70.3)
K9	Hemodialysis removes all excess potassium (False)	88 (35.8)
K10	Potassium should be checked at least monthly (True)	152 (61.8)
K11	Leaching vegetables reduces potassium (True)	76 (30.9)
K12	Nuts and seeds are low in potassium (False)	119 (48.4)
K13	Potassium binders remove potassium from the gut (True)	67 (27.2)
K14	Herbal teas are safe for potassium control (False)	98 (39.8)

Note: Data are presented as number (percentage) of correct responses. “Don’t know” responses were considered incorrect.

Supplementary Table S2. Item-Level Attitude Responses (n = 246)

Item	Statement	Disagree n (%)	Neutral n (%)	Agree n (%)
A1	Controlling potassium is important for health	8 (3.3)	31 (12.6)	207 (84.1)
A2	I am confident I can follow a low-potassium diet	42 (17.1)	58 (23.6)	146 (59.3)
A3	Avoiding high-potassium foods is too difficult	71 (28.9)	63 (25.6)	112 (45.5)

A4	I trust healthcare providers' advice	12 (4.9)	29 (11.8)	205 (83.3)
A5	I feel anxious about high potassium	27 (11.0)	54 (22.0)	165 (67.1)
A6	Small dietary changes can make a difference	33 (13.4)	51 (20.7)	162 (65.9)
A7	I am willing to involve family in meal preparation	48 (19.5)	44 (17.9)	154 (62.6)
A8*	Regular potassium checks are unnecessary	172 (69.9)	42 (17.1)	32 (13.0)
A9	I am motivated to learn about potassium-safe foods	18 (7.3)	49 (19.9)	179 (72.8)
A10	My current diet is safe for potassium	96 (39.0)	77 (31.3)	73 (29.7)
A11	Low-potassium diet may cause weakness	113 (45.9)	71 (28.9)	62 (25.2)
A12	More practical dietary advice is needed	15 (6.1)	33 (13.4)	198 (80.5)

Note: Data are presented as number (percentage).
Item A8 was reverse-coded during analysis.

Supplementary Table S3. Item-Level Practice Responses (n = 246)

Item	**Behavior**	**Never n (%)**	**Sometimes n (%)**	**Always n (%)**
P1	Avoid high-potassium foods (e.g., bananas, dates)	58 (23.6)	92 (37.4)	96 (39.0)
P2	Boil vegetables to reduce potassium	126 (51.2)	69 (28.0)	51 (20.7)
P3	Check food labels for potassium content	162 (65.9)	54 (22.0)	30 (12.2)
P4	Take prescribed medications regularly	19 (7.7)	52 (21.1)	175 (71.1)
P5	Record food intake	163 (66.3)	48 (19.5)	35 (14.2)
P6	Prepare meals to control potassium	178 (72.4)	37 (15.0)	31 (12.6)
P7	Ask about potassium content when eating outside	147 (59.8)	58 (23.6)	41 (16.7)
P8	Follow fluid intake recommendations	94 (38.2)	83 (33.7)	69 (28.0)

P9	Remind family to avoid high-potassium ingredients	113 (45.9)	72 (29.3)	61 (24.8)
P10	Use low-potassium salt substitutes	165 (67.1)	49 (19.9)	32 (13.0)
P11	Ask about latest potassium levels	76 (30.9)	87 (35.4)	83 (33.7)
P12	Follow dietary advice consistently	67 (27.2)	94 (38.2)	85 (34.6)

Note: Data are presented as number (percentage).