

Supplemental file

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Supplementary table 1. Questions on depressive symptoms and emotional well-being in the survey.

Emotional Well-Being Measure	Survey Question	Answer Options	Interpretation of Responses	Reference
Depressive symptoms	a. Depressed mood: 'During the past month, have you often been bothered by feeling down, depressed, or hopeless?' b. Anhedonia: 'During the past month, have you often been bothered by little interest or pleasure in doing things?'	'Yes' or 'no'	'Yes' to either question was considered positive for depressive symptoms.	¹⁶
Positive Influence at Work	'How often do you feel that you are positively influencing other people's lives through your work?'	'Every day', 'a few times a week', 'once a week', 'a few times a month', 'once a month' or 'a few times a year or less'	'Once a week' or more frequently was affirmative of positive influence at work.	¹⁷
Quality of Program Leadership	'My program leadership inspires me to do my best.' To what extent do you agree or disagree with this statement?	'Strongly agree', 'agree', 'neither agree nor disagree', 'disagree' or 'strongly disagree'	'Strongly agree' or 'agree' indicates strong quality of program leadership.	^{4,15}
Work-Life Balance	'How satisfied are you with the balance between your personal and professional life?'	'Very satisfied', 'somewhat satisfied', 'neutral', 'somewhat dissatisfied' or 'very dissatisfied'	'Very satisfied,' 'somewhat satisfied,' or 'neutral' indicates adequate work-life balance.	¹⁸
Quality of Life	'Which of the following best describes your overall quality of life?'	'As good as it can be', 'somewhat good', 'neutral', 'somewhat bad' or 'as bad as it can be'	'As good as it can be,' 'somewhat good,' or 'neutral' indicates good quality of life.	^{4,15}
Career Satisfaction	'If given the opportunity to revisit your career choice, would you choose to be a nephrologist again?'	'Definitely yes', 'probably yes', 'not sure', 'probably no' or 'definitely no'	'Definitely yes' or 'probably yes' indicates career satisfaction.	¹⁸
Disruptive Environment	'How frequently have you experienced or witnessed disruptive behavior of a physician in your workplace?'	'Daily', 'weekly', '1 to 2 times per month', '1 to 5 times per year' or 'never'	'1 to 5 times per year' or more frequently indicates disruptive environment.	¹⁹

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Social Support	'Do you have someone you can count on to listen to you when you need to talk?'	'All of the time', 'most of the time', 'some of the time', 'a little of the time' or 'none of the time'	'All of the time,' 'most of the time,' or 'some of the time' indicates presence of social support.	20
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Supplementary table 2: Comparison of demographic characteristics of responders and non-responders.

	Entire nephrology fellow pool ^a	Responders	Non-responders	Test for difference ^b
US medical graduate [n (%)]	263 (32.5)	126 (36.7)	137 (29.5)	χ^2 (1) = 4.76, p=0.03
International medical graduate [n (%)]	545 (67.5)	217 (63.3)	328 (70.5)	
Female gender [n (%)]	278 (34.4)	131 (37.9)	147 (31.9)	χ^2 (1) = 3.12, p=0.08
Male gender [n (%)]	529 (65.6)	215 (62.1)	314 (68.1)	
First year fellow [n (%)]	411 (50.9)	158 (47.6)	253 (53.2)	χ^2 (1) = 2.42, p=0.12
Second year fellow [n (%)]	397 (49.1)	174 (52.4)	223 (46.8)	
Mean age of first year fellows (in years) \pm sd ^c	34.3	33.8 \pm 4.3	34.6	t (155) = 2.32, p=0.02

^a: Data obtained from ACGME Data report 2017-2018.⁸

^b: By chi-square or t test, as appropriate.

^c: Standard deviation (sd) of age was obtained for the responding fellows from the study sample data and was not available for the entire fellow pool in the ACGME Data report 2017-2018.

Supplementary table 3. Parameters stratified by burnout status.*

Variable	Burnout (n=104)	No Burnout (n=243)
Mean Age \pm SD (years)	33.9 \pm 4.3	34.4 \pm 4.6
Female gender ¹	48 (46.2%)	83 (34.2%)
Second year of fellowship	54 (52.9%)	120 (52.2%)
IMG	58 (56.3%)	159 (66.3%)
Nephrology as first fellowship choice	38 (36.9%)	88 (36.4%)
Educational debt present	53 (51.5%)	114 (47.5%)
Workload (>15 patients/day) ²	89 (86.4%)	174 (71.9%)
Clinical nephrology fellowship	91 (87.5%)	211 (86.8%)
Being in a relationship	69 (66.3%)	183 (75.3%)
Positive Influence	56 (53.8%)	134 (55.1%)
Positive Screen for Depression ³	69 (67.0%)	54 (22.2%)
Strong Program Leadership ³	60 (57.7%)	201 (82.7%)
Adequate Work-Life Balance ³	43 (41.3%)	197 (81.4%)
Social Support Present ³	82 (79.6%)	228 (93.8%)
Good Quality of Life ³	73 (70.9%)	226 (93.4%)
Career Satisfaction Present ³	57 (55.3%)	197 (81.4%)
Disruptive Environment Present ³	66 (63.5%)	89 (36.8%)

*IMG = international medical graduate.

P-values for significant differences were noted as:¹ p=0.029, ² p=0.01 and ³ p<0.001

Supplementary table 4. Association of characteristics with burnout among responding US nephrology fellows.*

Variable	Odds Ratio	95% CI	p value
Age (in years)	0.99	0.93 - 1.06	0.85
Female vs male gender	1.90	1.09 - 3.32	0.02
1st year vs 2nd year of fellowship	1.16	0.67 - 2.01	0.60
IMG vs USMG	0.57	0.31 - 1.03	0.06
Work load (>15 patients/day) vs (≤15 patients/day)	1.52	0.74 - 3.10	0.25
Relationship status (yes vs no)	0.67	0.36 - 1.25	0.21
Strong program leadership (yes vs no)	0.63	0.33 - 1.18	0.15
Social support (present vs absent)	0.47	0.19 - 1.13	0.09
Disruptive environment (yes vs no)	2.63	1.48 - 4.66	0.001
Work-life balance (poor vs adequate)	3.97	2.22 - 7.07	<0.001

*The model included 96 fellows with burnout and 226 fellows without burnout.

Supplementary table 5. Multivariable logistic regression model for predictors of depressive symptoms.*

Variable	Odds Ratio	95% CI			p value
Age (in years)	0.98	0.92	-	1.05	0.60
Female vs male gender	1.43	0.82	-	2.51	0.21
1st year vs 2nd year of fellowship	0.92	0.53	-	1.60	0.76
IMG vs USMG	0.56	0.31	-	1.01	0.06
Work load (>15 patients/day) vs (≤15 patients/day)	0.91	0.47	-	1.77	0.78
Relationship status (yes vs no)	0.77	0.41	-	1.44	0.42
Strong program leadership (yes vs no)	0.46	0.24	-	0.88	0.02
Social support (present vs absent)	0.08	0.03	-	0.24	<0.001
Disruptive environment (yes vs no)	1.16	0.65	-	2.06	0.62
Work-life balance (adequate vs poor)	0.17	0.10	-	0.31	<0.001

*The model included 115 fellows who were positive for depressive symptoms and 208 fellows who were negative for depressive symptoms.