Supplementary materials

Table S1. Comparison of nurses' glass ceiling perceptions with personal and professional characteristics

		Perception of glass ceiling				
	Variable	**Multiple role assumption Avg. ± SD**	**Perceptions of personal preference Avg. ± SD**	**Organisational culture Avg. ± SD**	**Stereotypes Avg. ± SD**	**Total score Avg. ± SD**
Gender	Female	2.08 ± 0.95	4.40 ± 0.81	3.38 ± 1.18	1.75 ± 0.82	2.78 ± 0.54
	Male	2.93 ± 1.06	3.87 ± 0.94	2.70 ± 1.04	2.63 ± 1.02	2.99 ± 0.50
		t = –5.970; **p = <0.001**	t = 4.750; **p = <0.001**	t = 4.727; **p = <0.001**	t = –7.598; **p = <0.001**	t = –3.062; **p = <0.001**
Marital status	Married	2.31 ± 1.02	4.34 ± 0.80	3.28 ± 1.16	1.94 ± 0.93	2.85 ± 0.51
	Single	2.04 ± 0.98	4.27 ± 0.95	3.25 ± 1.22	1.78 ± 0.88	2.72 ± 0.57
		t = 2.574; **p = 0.011**	t = 0.793; p = 0.429	t = 0.253; p = 0.800	t = 1.682; p = 0.094	t = –2.349; **p = 0.020**
Age	[a]28 and↓	2.12 ± 1.04	4.39 ± 0.88	3.05 ± 1.21	1.75 ± 0.91	2.71 ± 0.58
	[b]29–35	2.57 ± 1.08	4.18 ± 0.90	3.24 ± 1.21	2.15 ± 0.98	2.94 ± 0.50
	[c]36–43	2.32 ± 0.99	4.28 ± 0.87	3.37 ± 1.12	1.95 ± 0.90	2.87 ± 0.53
	[c]44 and↑	2.00 ± 0.91	4.37 ± 0.76	3.42 ± 1.17	1.79 ± 0.86	2.77 ± 0.49
		F = 5.492; **p = 0.001**	F = 1.168; p = 0.322	F = 2.152; p = 0.093	F = 3.542; **p = 0.015**	F = 3.326; **p = 0.020**
		b>a, d			**b>a, d**	**b>a, d**
Educational status	[a]High School	2.21 ± 1.10	4.43 ± 0.93	3.08 ± 1.30	1.82 ± 0.97	2.77 ± 0.59
	[b]Associate degree	1.80 ± 0.84	4.23 ± 1.03	3.17 ± 1.22	1.67 ± 0.88	2.60 ± 0.52
	[c]License	2.38 ± 1.05	4.31 ± 0.82	3.20 ± 1.13	1.99 ± 0.94	2.86 ± 0.54
	[d]Graduate school	2.04 ± 0.84	4.37 ± 0.69	3.76 ± 1.15	1.72 ± 0.75	2.84 ± 0.47
		F = 6.386; **p = <0.001**	F = 0.546; p = 0.651	F = 4.421; **p = 0.004**	F = 2.921; p = 0.054	F = 4.079; **p = 0.007**
		c>b		**d>a, b, c**		**c>b**
Institute where he/she works	[a]Ministry of Health Hospital	2.30 ± 0.98	4.30 ± 0.79	3.36 ± 1.13	1.89 ± 0.88	2.84 ± 0.51
	[b]Private hospital	1.95 ± 0.99	4.40 ± 0.94	3.10 ± 1.25	1.78 ± 0.92	2.69 ± 0.53
	[c]University hospital	2.19±1.13	4.31±0.96	3.12±1.28	1.96±1.04	2.79±0.63
		F = 3.506; **p = 0.031**	F = 0.428; p = 0.652	F = 2.099; p = 0.124	F = 0.798; p = 0.451	F = 2.318; p = 0.100
		a>b				
Unit where he/she works	[a]Internal clinics	2.39 ± 1.14	4.20 ± 0.95	3.06 ± 1.17	1.97 ± 0.96	2.80 ± 0.57
	[b]Surgical clinics	2.31 ± 0.94	4.23 ± 0.97	3.02 ± 1.20	2.00 ± 0.94	2.79 ± 0.58

	[c]Specialised units	2.11 ± 0.99	4.40 ± 0.70	3.36 ± 1.19	1.82 ± 0.92	2.80 ± 0.53
	[d]Polyclinics	2.14 ± 0.99	4.31 ± 0.93	3.40 ± 1.17	1.81 ± 0.77	2.79 ± 0.52
	[e]Other*	2.13 ± 0.91	4.46 ± 0.75	3.63 ± 1.08	1.88 ± 0.91	2.87 ± 0.47
		F = 1.517; p = 0.196	F = 1.371; p = 0.243	F = 3.160; **p = 0.014**	F = 0.857; p = 0.490	F = 0.201; p = 0.938
				e>a, b		
Years working in the profess-sion	[a]5 years and↓	2.20 ± 0.99	4.34 ± 0.86	3.05 ± 1.15	1.84 ± 0.93	2.74 ± 0.56
	[b]6–10 years	2.49 ± 1.13	4.22 ± 0.91	3.17 ± 1.27	2.14 ± 1.05	2.91 ± 0.59
	[c]11–15 years	2.37 ± 1.17	4.39 ± 0.77	3.16 ± 1.14	1.77 ± 0.87	2.80 ± 0.49
	[d]16 years and↑	2.08 ± 0.91	4.33 ± 0.84	3.46 ± 1.15	1.84 ± 0.84	2.81 ± 0.51
		F = 3.423; **p = 0.017**	F = 0.514; p = 0.673	F = 3.191; **p = 0.024**	F = 2.405; p = 0.067	F = 1.329; p = 0.264
		b>d		**d>a**		
Years working at the institu-tion	[a]5 years and↓	2.16 ± 0.98	4.33 ± 0.86	3.20 ± 1.12	1.89 ± 0.95	2.78 ± 0.54
	[b]6–10 years	2.52 ± 1.09	4.24 ± 0.88	3.36 ± 1.20	2.03 ± 0.96	2.92 ± 0.53
	[c]11–15 years	2.17 ± 1.06	4.35 ± 0.75	3.19 ± 1.17	1.69 ± 0.66	2.72 ± 0.45
	[d]16 years and↑	2.02 ± 0.87	4.38 ± 0.87	3.41 ± 1.30	1.85 ± 0.93	2.79 ± 0.58
		F = 4.101; **p = 0.007**	F = 0.452; p = 0.716	F = 0.858; p = 0.463	F = 1.821; p = 0.143	F = 2.243; p = 0.083

Note: Avg. ± SD – Mean ± Standard deviation, t – t-test in independent groups, F – One-way ANOVA test, $p < 0.05$.

Table S2. Comparison of nurses' career perceptions of career problems with personal and professional characteristics

		The scale of career problems in nurses				
	Variable	**Stress and exhaustion Avg. ±SD**	**Organisational pressure and professional incompatibility Avg. ± SD**	**The problem of dual career Avg. ± SD**	**Gender-related career challenges Avg. ± SD**	**Total score Avg. ± SD**
Gender	Female	39.94 ± 12.28	20.69 ± 10.63	10.43 ± 5.92	13.74 ± 6.76	84.80 ± 27.66
	Male	39.06 ± 13.89	22.08 ± 11.49	10.11 ± 5.65	13.20 ± 6.66	84.45 ± 31.58
		t = 0.473; *p* = 0.638	*t* = –0.901; *p* = 0.370	*t* = 0.416; *p* = 0.679	*t* = 0.595; *p* = 0.554	*t* = 1.721; *p* = 0.086
Marital status	Married	40.35 ± 12.31	21.33 ± 10.64	10.49 ± 5.90	14.31 ± 6.71	86.49 ± 28.04
	Single	38.74 ± 12.93	20.08 ± 10.99	10.17 ± 5.83	12.40 ± 6.64	81.39 ± 28.50
		t = 1.213; *p* = 0.226	*t* = 1.102; *p* = 0.271	*t* = 0.534; *p* = 0.594	*t* = 2.738; ***p* = 0.007**	*t* = 0.083; *p* = 0.934
Age	[a]28 and↓	37.98 ± 12.52	19.20 ± 11.08	9.82 ± 5.91	11.64 ± 6.31	78.64 ± 28.58
	[b]29–35	41.28 ± 12.32	22.42 ± 11.51	10.74 ± 6.06	14.41 ± 6.38	88.85 ± 29.08
	[c]36–43	41.95 ± 12.49	20.92 ± 10.79	9.55 ± 5.51	14.64 ± 6.85	87.06 ± 28.12
	[c]44 and↑	38.69 ± 12.48	21.64 ± 9.83	11.49 ± 5.94	14.29 ± 6.93	86.12 ± 26.96
		F = 2.507; *p* = 0.059	*F* = 1.609; *p* = 0.187	*F* = 2.557; *p* = 0.055	*F* = 4.921; ***p* = 0.002**	*F* = 2.631; *p* = 0.051
					b, c, d>a	
Educational status	[a]High school	37.20 ± 13.18	18.53 ± 11.99	9.48 ± 5.80	11.15 ± 7.39	76.35 ± 32.76
	[b]Associate degree	38.53 ± 13.06	19.26 ± 11.97	9.92 ± 6.19	11.55 ± 6.40	79.26 ± 29.58
	[c]License	40.48 ± 11.93	21.94 ± 10.22	10.52 ± 5.82	14.29 ± 6.45	87.24 ± 26.17
	[d]Graduate school	40.11 ± 13.79	20.06 ± 10.49	10.86 ± 5.87	14.89 ± 7.02	85.92 ± 30.53
		F = 1.035; *p* = 0.377	*F* = 2.021; *p* = 0.110	*F* = 0.629; *p* = 0.596	*F* = 5.463; ***p* = 0.001**	*F* = 2.649; *p* = 0.050
					c, d>a, b	
Institution where he/she works	[a]Ministry of Health hospital	40.41 ± 12.12	21.33 ± 10.18	10.75 ± 5.70	14.44 ± 6.41	86.92 ± 26.18
	[b]Private hospital	37.11 ± 13.12	18.69 ± 11.91	8.92 ± 5.77	10.64 ± 6.86	75.36 ± 29.64
	[c]University hospital	40.30 ± 13.25	21.58 ± 11.53	10.51 ± 6.43	13.80 ± 7.05	86.18 ± 32.51
		F = 2.030; *p* = 0.133	*F* = 1.866; *p* = 0.156	*F* = 2.788; *p* = 0.063	*F* = 9.405; ***p* = <0.001**	*F* = 4.935; ***p* = 0.008**
					a, c>b	**a, c>b**
Unit where he/she works	[a]Internal clinics	42.55 ± 13.02	21.59 ± 10.97	10.08 ± 5.81	13.17 ± 6.78	87.38 ± 30.22
	[b]Surgical clinics	39.25 ± 12.42	21.68 ± 11.58	9.44 ± 5.57	12.35 ± 6.22	82.73 ± 28.06
	[c]Specialised Units	38.70 ± 12.23	19.59 ± 10.01	9.73 ± 5.81	13.77 ± 6.54	81.80 ± 26.29

	[d]Polyclinics	40.02 ± 11.99	23.74 ± 11.08	13.00 ± 5.81	15.83 ± 7.09	92.59 ± 29.19
	[e]Other*	37.63 ± 12.53	19.03 ± 10.46	11.06 ± 5.96	15.69 ± 7.06	81.41 ± 27.40
		F = 1.959; *p* = 0.100	*F* = 2.036; *p* = 0.089	*F* = 3.849; ***p* = 0.004**	*F* = 2.168; *p* = 0.072	*F* = 1.910; *p* = 0.108
				d>a, b, c		
Years working in the profession	[a]5 years and↓	36.44 ± 12.40	18.39 ± 10.70	9.71 ± 5.69	11.44 ± 6.19	75.99 ± 28.43
	[b]6-10 years	44.68 ± 11.12	23.77 ± 11.04	10.96 ± 6.17	14.05 ± 6.36	93.47 ± 27.08
	[c]11–15 years	39.57 ± 13.19	20.67 ± 10.61	10.06 ± 5.85	14.33 ± 6.61	84.63 ± 27.76
	[d]16 years and↑	39.74 ± 12.43	21.18 ± 10.51	10.60 ± 5.87	14.51 ± 6.99	86.03 ± 27.69
		F = 6.305; ***p* = <0.001**	*F* = 3.634; ***p* = 0.013**	*F* = 0.808; *p* = 0.490	*F* = 4.923; ***p* = 0.002**	*F* = 5.808; ***p* = 0.001**
		b>a, d	**b>a**		**d>a**	**b>a**
Years working at the institution	[a]5 years and↓	38.96 ± 12.65	19.73 ± 10.85	9.97 ± 5.76	12.53 ± 6.49	81.19 ± 28.52
	[b]6–10 years	43.50 ± 11.53	21.96 ± 10.57	11.00 ± 5.77	14.95 ± 6.65	91.41 ± 26.81
	[c]11–15 years	39.56 ± 13.06	20.92 ± 10.03	9.69 ± 5.81	13.28 ± 6.54	83.45 ± 27.33
	[d]16 years and↑	37.16 ± 12.25	22.30 ± 11.33	11.16 ± 6.28	14.97 ± 7.21	85.60 ± 29.27
		F = 4.230; ***p* = 0.006**	*F* = 1.411; *p* = 0.239	*F* = 1.379; *p* = 0.249	*F* = 3.856; ***p* = 0.010**	*F* = 2.798; *p* = 0.055
		b>a, d			**b, d>a**	

Note: Avg. ± SD – Mean ± Standard deviation, *t* – *t*-test in independent groups, *F* – One-way ANOVA test, $p < 0.05$.

Table S3. The relationship between the perception of glass ceilings and career problems in nursing

Scale	Sub-dimension	1	2	3	4	5	6	7	8
The scale of career problems in nurses	1. Stress and exhaustion	1							
	2. Organisational pressure and professional incompatibility	0.527**	1						
	3. Problem of dual career	0.360**	0.471**	1					
	4. Gender-related career challenges	0.446**	0.501**	0.400**	1				
Perception of glass ceiling	5. Multiple role assumption	0.0199**	0.217**	0.125*	0.180**	1			
	6. Perceptions of personal preference	0.045	–0.048	–0.006	0.015	–0.211**	1		
	7. Organisational culture	0.171**	0.130**	0.157**	0.308**	–0.023	0.189**	1	
	8. Stereotypes	0.148**	0.205**	0.153**	0.169**	0.534**	–0.357**	0.018	1

Table S4. Regression analysis results related to variables predicting career problems in nursing

	β	95% CI		*t*	*p*
		LB	UB		
Career problems in nursing scale	0.321	12.028	21.779	6.816	0.000
Model: $F = 46.453$; $p = 0.000$; $R^2_{adj} = 0.203$; Durbin–Watson = 1.850					
Note: Simple linear regression (enter method); Dependent variable: Career problems in nursing scale. CI – confidence interval; LB – lower bound; UB – upper bound; Independent variable: Perception of the glass ceiling; R^2_{adj} = adjusted *r*-square. * $p < 0.05$; ** $p < 0.01$.					