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EFFECT OF OCCUPATIONAL STRESS ON OVERACTIVE BLADDER SYMPTOMS: A CROSS-SECTIONAL STUDY AMONG FEMALE NURSES OF BEIJING

Hypothesis / aims of study
Overactive bladder (OAB) is a common disorder that negatively affects the quality of life of our patients and carries a large socioeconomic burden. Impact of occupational stress on OAB is unknown yet. This study aims to evaluate prevalence of OAB symptoms and effects of occupational stress on them among female nurses of Beijing.

Study design, materials and methods
From September 2010 to March 2011, 1135 female nurses with at least 1 year of nursing experience from three regional hospitals were cluster-sampled. Participants were asked to complete self-administrated questionnaires of demographics, workplace factors and OAB-related symptoms and then Occupational Stress Inventory- Revised (OSI-R) tests. Self- designed questionnaire was developed on the basis of Liao's Taiwan Nurses Bladder Survey [1] and was revised according our pilot study. OSI-R test measures three dimensions of occupational adjustment: occupational stress (ORQ), psychological strain (PSQ), and coping resources (PRQ). For ORQ and PSQ scales, high scores suggest significant levels of occupational stress and psychological strain, respectively [2]. For the PRQ scales, high scores indicate highly developed coping resources [2]. Raw scores were compared between nurses and normative Chinese female professionals sample, and between nurses with OAB and those OAB-free [3]. Multiple logistic regression was implemented to adjust effects of age, body mass index, childbearing history and pelvic surgery on OAB, and evaluated independent impact of perceived occupational stress.

Results
1070 (94.27%) valid available questionnaires were obtained. Participants had a mean age of 29.55±7.95, range from 19 to 58. Prevalence of OAB was 27.57% (95% CI: 24.89%-30.25%), and urgency 64.39% (95% CI: 61.52%-67.26%) , frequency 27.10% (95% CI: 24.44%-29.77%), nocturia 17.88% (95% CI: 15.59%-20.18%) and urge incontinence 21.03% (95% CI: 18.59%-23.47%). Nurses' scores of ORQ and PSQ scales were statistically higher than normative samples, while that of PRQ scales were lower. Nurses with OAB had higher scores of most ORQ and PSQ scales than those OAB-free (Table1). After adjusted age, body mass index, childbearing and pelvic surgery history, physical strain, role ambiguity and role insufficiency had effect on OAB (ORs were 1.046 (95% CI, 1.022-1.070), 1.035 (95% CI, 1.006-1.065), 0.963 (95% CI, 0.932-0.996)) (Figure1).

Interpretation of results
Nurses are special occupational groups with heavy workload and high job strain, which indeed associate with their bladder function. Our data show that after adjusted age, BMI, childbearing and pelvic surgery history, each subscale of OSI-R is associated with at least one type of OAB or OAB symptoms. However, any ORs from multiple logistic regression analysis is above or below one by no more than 10%.

Concluding message
Prevalence of OAB symptoms and occupational stress among female nurses were higher than general female population. Perceived occupational stress was positively associated with OAB symptoms. Taking certain measures to decrease their occupational stress and psychological strain, and enhance their coping resources, may improve urological health of female nurses.

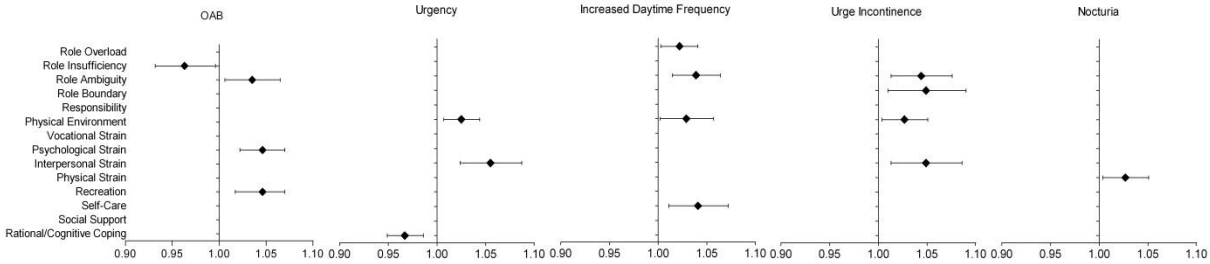
Table1. OSI-R scores of Beijing Nurses VS Normative samples, and scores of Nurses with OAB VS. OAB-free

OSI-R	Total	Normative sample	P-value[a]	OAB-free	OAB	P-value[b]
Occupational Stress	154.48±22.92	141.42±16.99	0.000	153.31±22.32	157.55±24.22	0.007
Role Overload	28.51±5.36	26.56±4.79	0.000	28.39±5.38	28.82±5.31	0.243
Role Insufficiency	28.82±5.76	25.40±4.72	0.000	28.88±5.73	28.65±5.83	0.555
Role Ambiguity	21.38±6.02	18.77±4.61	0.000	21.16±5.84	21.95±6.46	0.070
Role Boundary	21.81±5.15	21.44±4.17	0.036	21.58±5.03	22.4±5.42	0.020
Responsibility	25.16±5.95	21.95±5.77	0.000	24.9±5.78	25.84±6.34	0.021
Physical Environment	28.82±7.79	27.31±6.55	0.000	28.42±7.79	29.89±7.68	0.006
Psychological strain	100.9±21.13	83.65±18.33	0.000	99.92±20.85	103.47±21.67	0.014
Vocational Strain	20.95±5.57	17.05±4.99	0.000	20.83±5.49	21.26±5.79	0.255
Psychological Strain	28.31±7.32	22.86±6.86	0.000	27.95±7.4	29.23±7.03	0.011
Interpersonal Strain	25.2±5.03	23.24±4.23	0.000	24.94±4.81	25.86±5.51	0.013
Physical Strain	26.5±7.22	20.50±5.88	0.000	26.19±7.22	27.3±7.19	0.025
Coping Resources	119.52±19.38	130.01±17.98	0.000	119.3±19.09	120.11±20.15	0.543

Recreation	27.12±5.55	27.42±5.47	0.107	26.93±5.51	27.62±5.64	0.068
Self-Care	27.67±5.47	29.95±5.77	0.000	27.64±5.41	27.76±5.65	0.748
Social Support	35.9±6.92	37.30±6.28	0.000	35.94±6.8	35.81±7.25	0.791
Rational/Cognitive Coping	28.83±7.49	35.34±6.10	0.000	28.79±7.42	28.92±7.69	0.817

a. P-values of t-test of nurses v.s. normative sample [3];
b. P-values of t-test of nurses with OAB v.s. those OAB-free.

Figure1. The ORs with statistical significance between OSI-R subscales scores and OAB symptoms



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