

Smoking status and the Kano Test for Social Nicotine Dependence (KTSND) in employees of a regional cancer center in Japan.

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BACKGROUND

Smoking is the single greatest risk factor for cancer, and it is well-known that continual tobacco use elevates the risk of cancer recurrence and clinical complications.

The Japanese Cancer Association, the Japanese Circulation Society and the Japanese Nursing Association have all issued non-smoking declarations, and request that their members work to promote smoking cessation through a range of activities.

In 2006, the Japanese Association of Clinical Cancer Centers (JACC) devised a tobacco control plan to set new benchmarks for other healthcare providers.

PURPOSE

The JACC tobacco control plan has established that each hospital should keep the smoking rate among their healthcare professionals under 10%.

To achieve this aim, a baseline staff questionnaire regarding tobacco use was administered in 2008 at the Ibaraki Prefectural Central Hospital (a member of the JACC), with a follow-up survey in 2010.

The questionnaire's content included the Kano Test for Social Nicotine Dependence (KTSND), designed to evaluate permissive attitudes toward smoking.

METHODS

A self-administered questionnaire, including the KTSND as well as items on smoking status, occupation and demographic information, was collected from employees at the Ibaraki Prefectural Central Hospital in 2008. The same questionnaire was administered in 2010.

Comparison of categorical variables was done using chi-square tests. The Mann-Whitney U test was used for comparisons between two groups, and the Kruskal-Wallis test for comparisons between three or more groups.

Table 1. Sample characteristics

Category	2008	2010	χ^2, p
All subjects	775	880	
Returned (%)	617 (79.6)	858 (97.5)	
Replied (%)	611 (78.8)	853 (96.9)	
Gender			0.679
Male (%)	164 (27.1)	221 (26.1)	
Female (%)	442 (72.9)	626 (73.9)	
Missing responses	5	6	
Age (years)			0.879
20-29 (%)	125 (20.7)	184 (21.7)	
30-39 (%)	172 (28.5)	252 (29.7)	
40-49 (%)	174 (28.9)	241 (28.4)	
50-59 (%)	106 (17.6)	143 (16.8)	
60+ (%)	26 (4.3)	29 (3.4)	

Table 1. Sample characteristics (continued)

Category	2008	2010	χ^2, p
All subjects	775	880	
Occupational group			0.437
Medical doctors (%)	56 (9.2)	96 (11.4)	
Nurses (%)	252 (41.2)	357 (42.2)	
Other medical workers (%)	78 (12.8)	100 (11.9)	
Clerical or on-site workers	225 (36.8)	288 (34.2)	
Missing responses	0	12	
Smoking status			0.161
Never (%)	393 (67.6)	612 (72.3)	
Past (%)	95 (16.4)	123 (14.5)	
Current (%)	93 (16.0)	112 (13.2)	
Missing responses	30	6	
Second-hand smoking risks			0.427
Aware (%)	460 (79.0)	649 (77.3)	
Unaware (%)	122 (21.0)	191 (22.7)	
Missing responses	29	13	

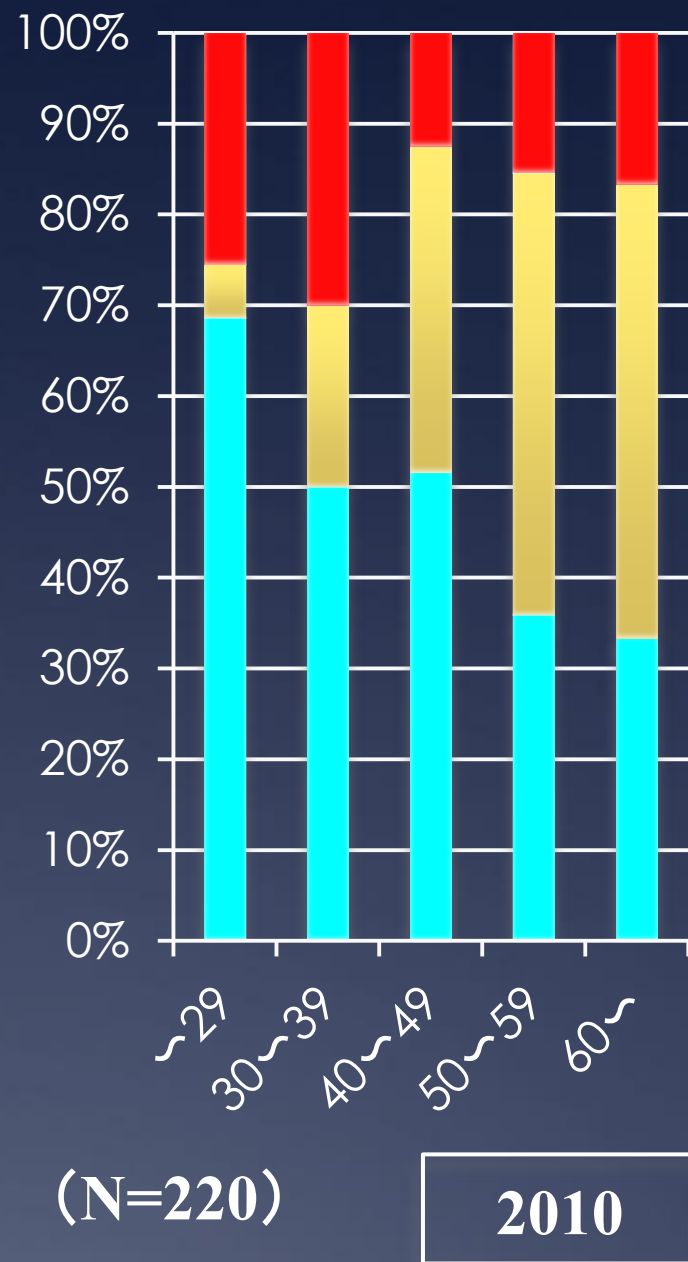
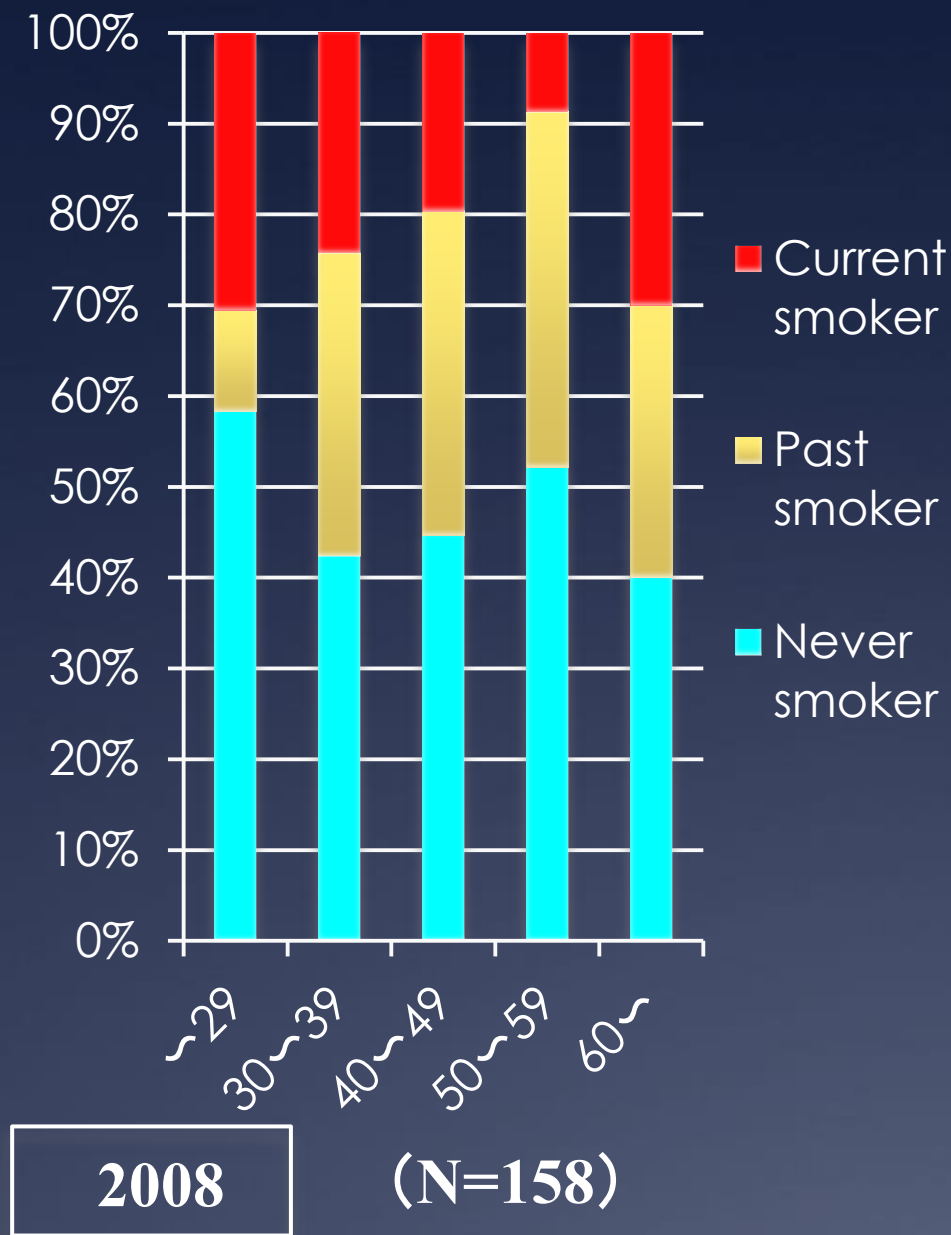


Fig 1. Smoking status by age group (Male)

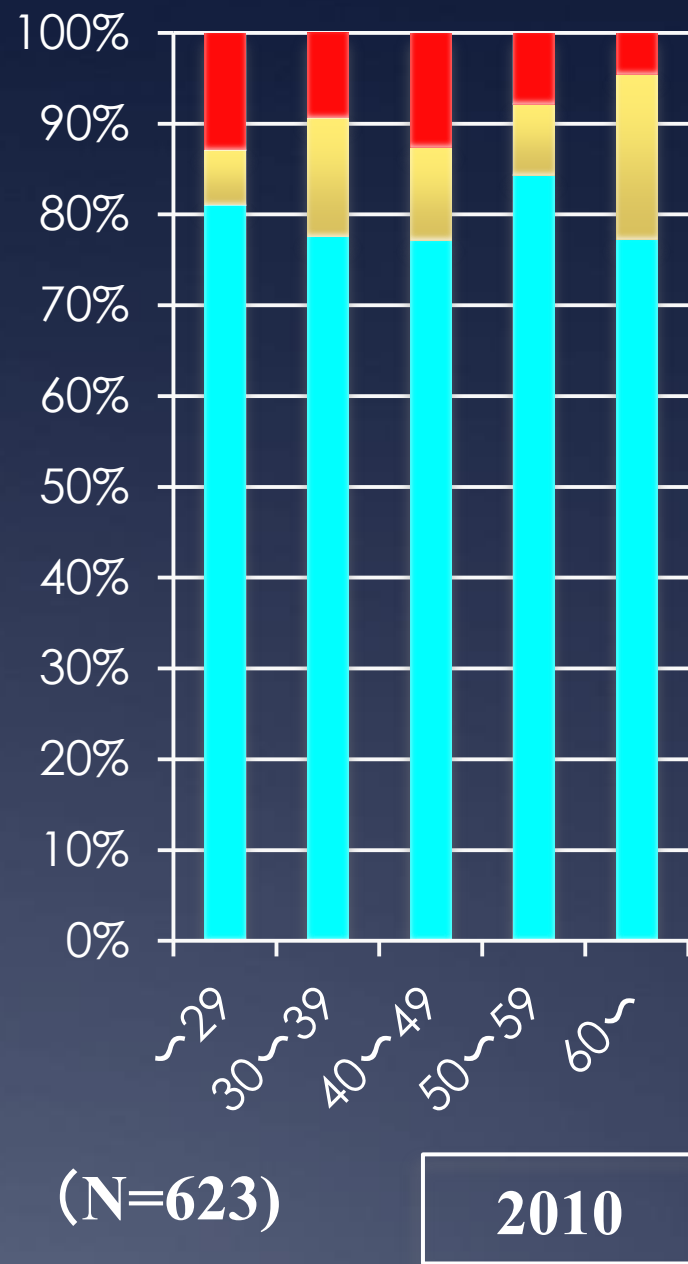
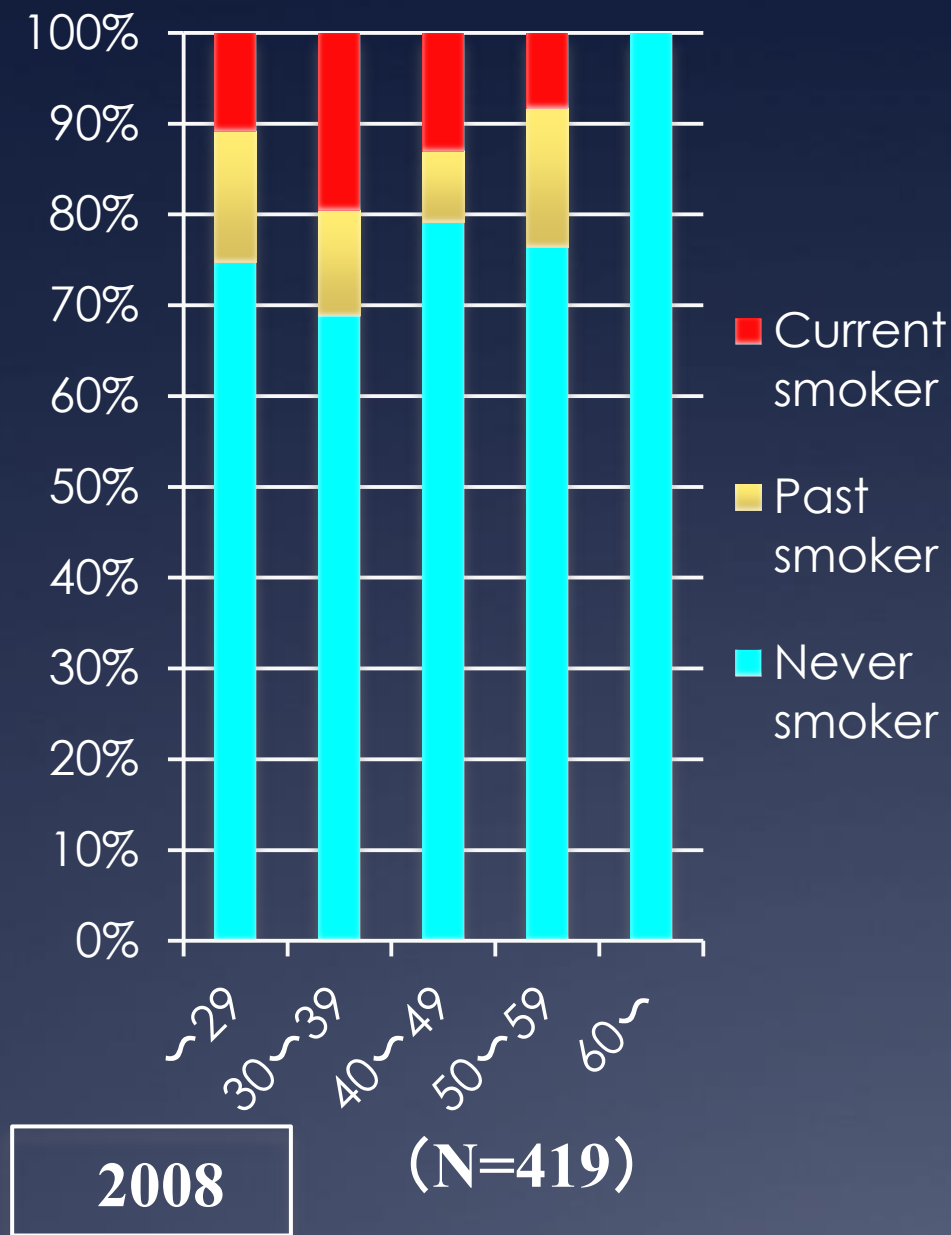


Fig 2. Smoking status by age group (Female)

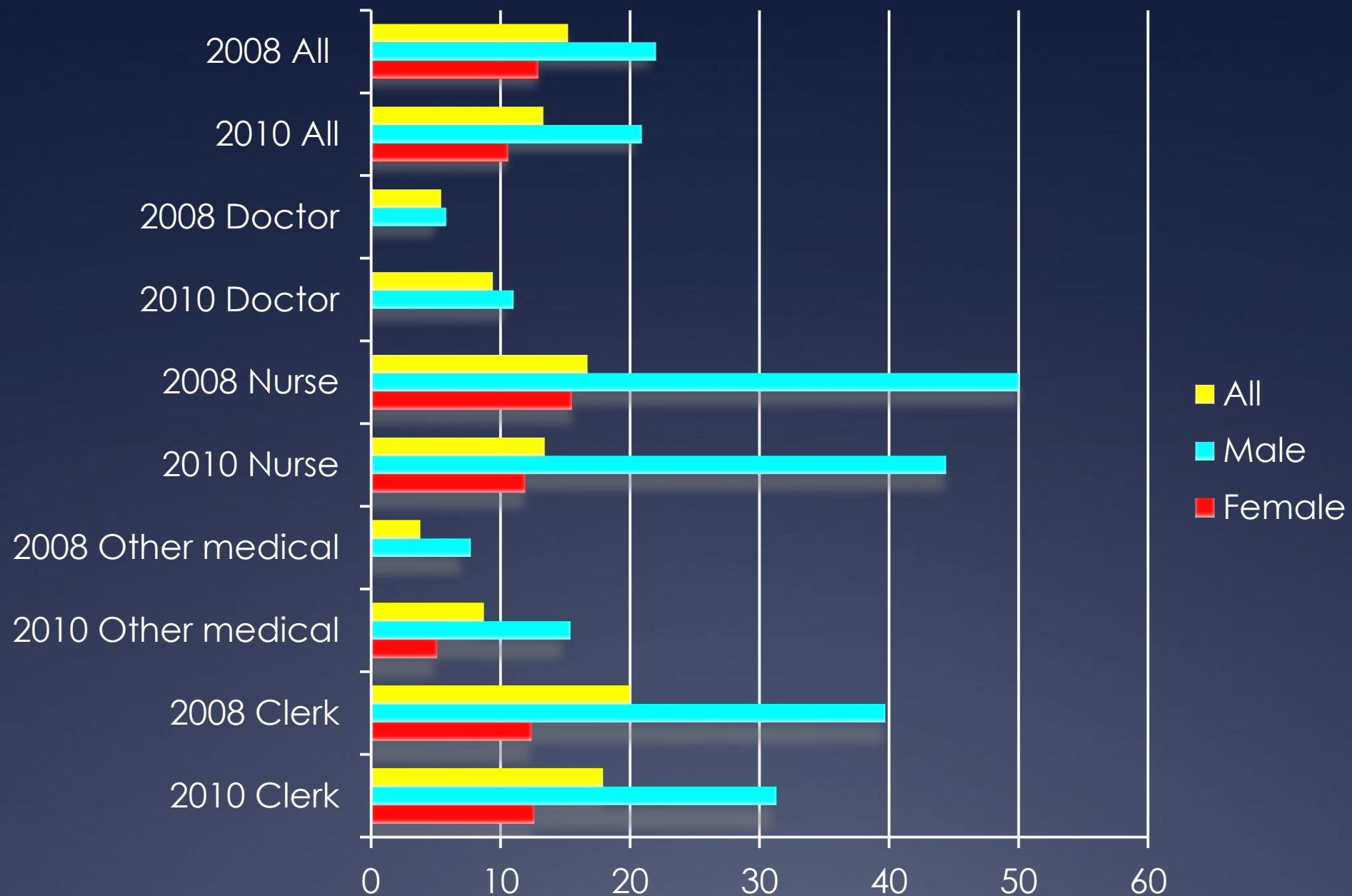


Fig 3. Smoking rates by occupational group 9

Table 2. Comparison of smoking rates with other survey results

Institute	Year	Subjects	n	Replied (%)	Smoking rate (%)				
					Doctor	Nurse	Other medical	Clerk	All
OMCC	2007	All	974	94.2	10.2	7.2	13.3	14.0	10.8
IPCH	2004	Nurse	358	90.0		15.0			
IPCH	2008	All	775	79.6	5.4	16.7	3.8	20.0	15.2
IPCH	2010	All	880	97.5	9.4	13.4	8.7	17.9	13.3

OMCC – Osaka Medical Center for Cancer and Cardiovascular Diseases (except for on-site workers), IPCH – Ibaraki Prefectural Central Hospital

	IPCH		2008 National Health and Nutrition Survey	2008 JMA	2006 JNA
	2008	2010			
All (Male)	22.0	20.9	36.8		
All (Female)	12.9	10.6	9.1		
Dr (Male)	5.8	11.0		15.0	
Dr (Female)	0.0	0.0		4.6	
Ns (Male)	50.0	44.4			54.2
Ns (Female)	15.5	11.9			18.5

JMA – Japan Medical Association, JNA – Japan Nursing Association

Components of the JACC tobacco control plan

- I. Smoke-free policy**
- II. Prohibit the sale or promotion of tobacco products**
- III. Smoking cessation support for patients**
- IV. Education for health practitioners**
- V. Research policy**
- VI. No smoking policy among health practitioners**

Table 3. The Kano Test for Social Nicotine dependence (KTSND)

		Definitely Yes	Probably Yes	Probably No	Definitely No
Q 1	Smoking itself is a disease	0	1	2	3
Q 2	Smoking is a part of culture	3	2	1	0
Q 3	Tobacco is one of life's pleasures	3	2	1	0
Q 4	Smokers' lifestyles should be respected	3	2	1	0
Q 5	Smoking sometimes enriches people's lives	3	2	1	0
Q 6	Tobacco has positive physical or mental effects	3	2	1	0
Q 7	Tobacco has effects to relieve stress	3	2	1	0
Q 8	Tobacco enhances the function of smokers' brains	3	2	1	0
Q 9	Doctors exaggerate the ill effects of smoking	3	2	1	0
Q 10	People can smoke at places where ashtrays are available	3	2	1	0

Scores range from 0-30, with higher scores indicating greater social dependence on nicotine.

Scores < 10 represent a low level of social nicotine dependence.

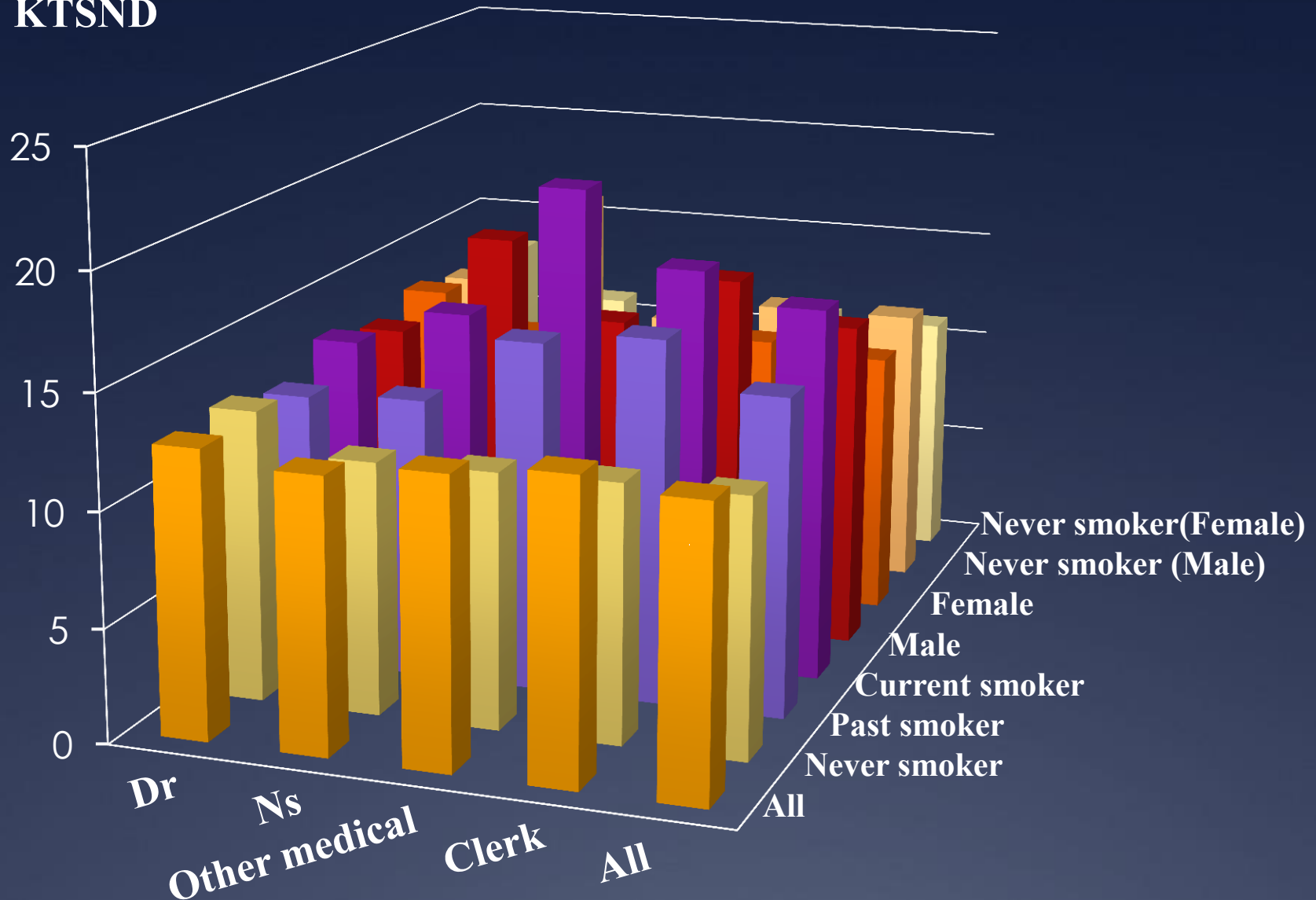
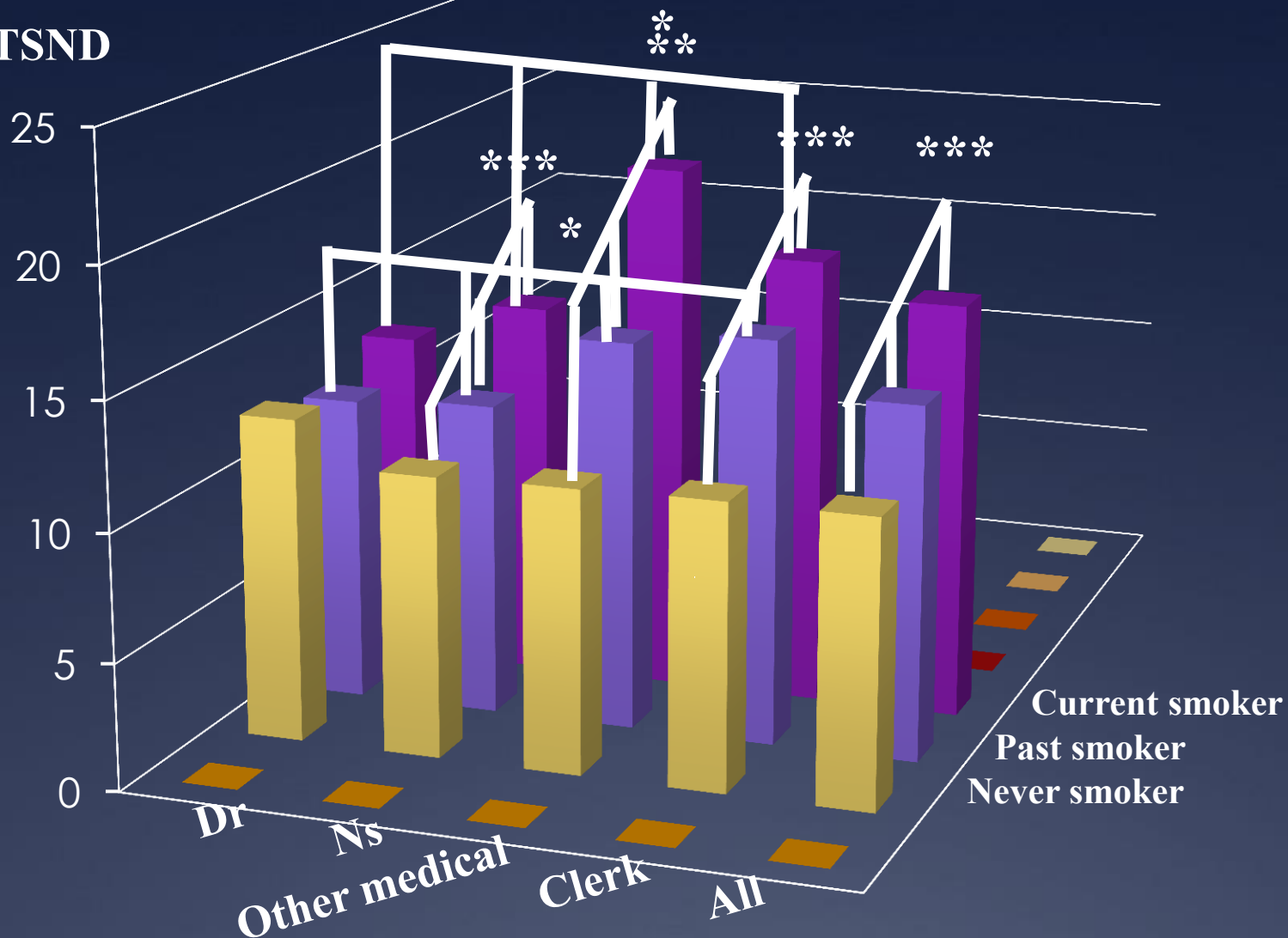


Fig 4. KTSND scores by occupational group and smoking status in 2008

KTSND

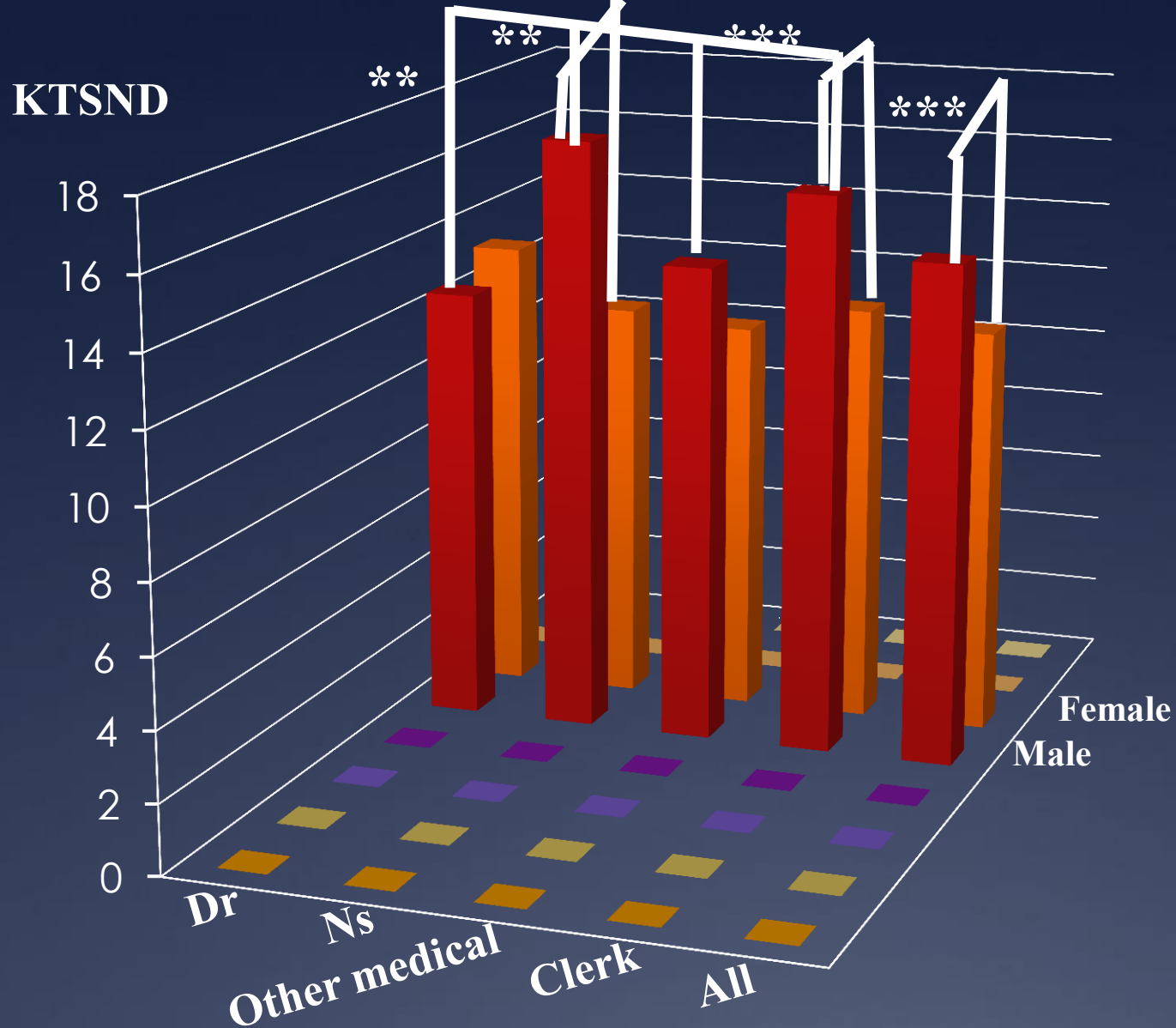


* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$

Fig 5. KTSND scores by occupational group and smoking status in 2008

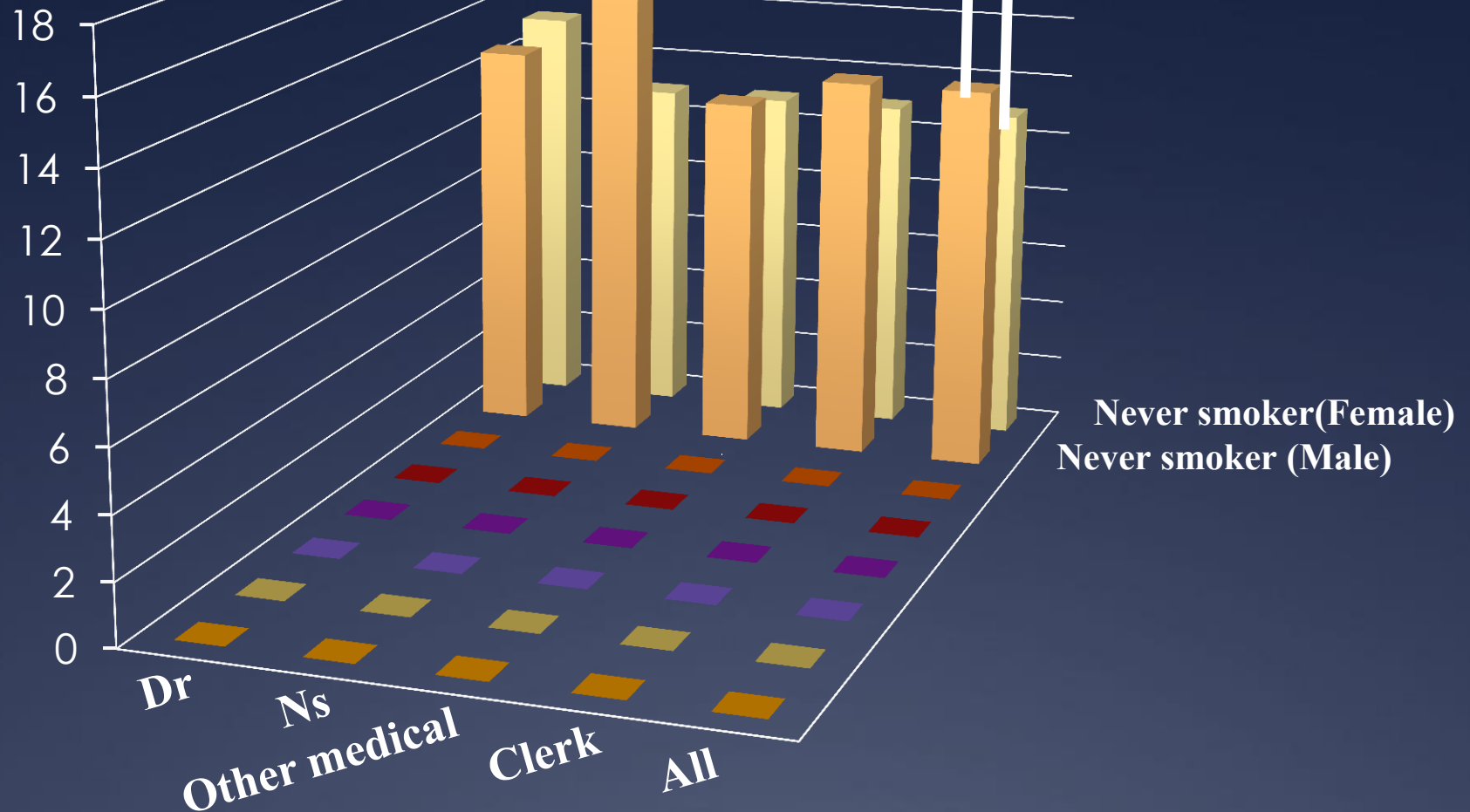


** $p < 0.01$

*** $p < 0.001$

Fig 6. KTSND scores by occupational group and gender in 2008

KTSND



* $p < 0.05$

Fig 7. KTSND scores by occupational group and gender (never smokers) in 2008

Table 4. Summary of scores for each question, all subjects (2008)

	Never-smokers (n = 384) Mean \pm SD	Past smokers (n = 94) Mean \pm SD	Current smokers (n = 88) Mean \pm SD	<i>p</i> value (Kruskal-Wallis test)
Q 1: Smoking itself is a disease	1.27 \pm 1.05	1.36 \pm 1.03	1.42 \pm 1.03	0.413
Q 2: Smoking is a part of culture	0.92 \pm 1.01	1.39 \pm 0.90	1.36 \pm 1.06	0.000
Q 3: Tobacco is one of life's pleasures	1.73 \pm 1.17	1.99 \pm 1.02	2.07 \pm 1.00	0.026
Q 4: Smokers' lifestyles should be respected	1.08 \pm 0.97	1.45 \pm 0.89	1.93 \pm 0.77	0.000
Q 5: Smoking sometimes enriches people's lives	1.05 \pm 0.98	1.31 \pm 0.96	1.45 \pm 0.93	0.000
Q 6: Tobacco has positive physical or mental effects	0.76 \pm 0.92	1.07 \pm 0.92	1.36 \pm 0.94	0.000
Q 7: Tobacco has effects to relieve stress	1.35 \pm 0.99	1.63 \pm 0.86	2.11 \pm 0.77	0.000
Q 8: Tobacco enhances the function of smokers' brains	0.57 \pm 0.73	0.81 \pm 0.85	1.00 \pm 0.87	0.000
Q 9: Doctors exaggerate the ill effects of smoking	0.53 \pm 0.75	0.65 \pm 0.79	1.23 \pm 1.00	0.000
Q 10: People can smoke at places where ashtrays are available	2.08 \pm 1.10	2.31 \pm 0.95	2.49 \pm 0.80	0.003

KTSND scores and their associations

1. KTSND scores of current smokers were significantly higher than those of past smokers and never smokers.
2. Smokers gave strong positive responses to Q3, Q7 and Q10 – similar to results of a previous study of employees in pharmaceutical companies. In addition, never and past smokers gave strong positive responses to Q10.

CONCLUSIONS

This study, whose objective was to investigate smoking status and attitudes to tobacco use among staff at a regional cancer center, found that smoking rates were relatively high.

Significant differences were found in KTSND scores according to smoking status.

KTSND scores differed according to hospital workers' occupational category.

Our results suggest that it is necessary to remove ashtrays and ban smoking areas to discourage smoking within hospitals.

Thank you for your attention.