



ORIGINAL ARTICLE

Factors Affecting Korean Registered Nurses' Intention to Implement Smoking Cessation Intervention

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Abstract

Objectives: Nurses have been identified as an instrumental partner in tobacco reduction. This study aimed to examine factors affecting Korean nurses' intention to implement smoking cessation intervention in Busan, Korea.

Methods: The participants were a total of 215 Korean registered nurses. A self-administered questionnaire evaluated predisposing factors, motivational factors (attitude, social influence, and self-efficacy) and intention to implement smoking cessation intervention. Data were analyzed by *t* tests, Pearson's correlation, and hierarchical multiple regression.

Results: The mean age of the participants was 28.12 ± 5.72 years. The majority of the participants were staff nurses (85.6%), and 64.2% of the sample had < 5 years of work experience. Significant predictors of intention to implement smoking cessation intervention included perceived barrier of smoking cessation intervention ($\beta = -0.128, p = 0.023$), willingness to receive smoking cessation training ($\beta = 0.123, p = 0.034$), more positive attitude ($\beta = 0.203, p = 0.002$), higher social influence ($\beta = 0.292, p < 0.001$), and higher self-efficacy toward smoking cessation intervention ($\beta = 0.151, p = 0.021$), which explained 45% of the total variance of intention to implement smoking cessation intervention.

Conclusion: Attitude, social influence, and self-efficacy towards smoking cessation intervention had a significant positive influence in determining the intention to implement smoking cessation intervention. These findings can be used to develop evidence-based smoking cessation training programs for nurses in Korea. The programs should aim for positive attitude, higher social influence, and higher self-efficacy in hospital settings.

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1. Introduction

Tobacco smoking is the most preventable cause of illness (e.g., cancer, cardiovascular disease, and other respiratory disease) and premature death worldwide [1]. In South Korea, smoking accounts for > 5,000 deaths (1 in 5 deaths), each year [2], and the rate of male smoking is the highest among other developed countries [3]. The South Korean government aims to reduce the adult male smoking rates from 42% in 2012 to 29% by the year 2020 [2], by implementing a nationwide comprehensive package of tobacco control strategies [4,5], such as promoting public access to smoking cessation treatment [2]. With increasing public demands on tobacco control, health care professionals, such as nurses, face increasing responsibilities on the optimal delivery of tobacco control interventions [6,7].

Registered nurses, the largest health care professional group, have been identified as an instrumental player in tobacco control, especially oncology nursing [8,9]. Receiving advice and support from nursing staff was effective for patients to change their smoking behavior (i.e., increasing the quit rate of smoking) in hospital settings [8]. However, it is alarming that only 5.8% out of 344 Korean nurses provided smoking cessation counseling [10] and half of Korean nurses reported lack of training as a major barrier to active engagement in smoking cessation intervention [11].

The Integrated Change (I-Change) Model [12] suggests that actual clinical behavior of nurses is influenced by the individual intention state, which is affected by cognitive and behavioral parameters (i.e., motivational, predisposing, awareness, and information factors). However, little is known about cognitive and behavioral determinants of Korean nurses' intention to implement smoking cessation intervention for their patients.

As the I-Change Model has been a great framework to understand influencing factors for nurses' intention to implement smoking cessation for their patients [13], we examined associations of motivational factors (i.e., attitude, social influence, and self-efficacy) and selected predisposing factors (i.e., demographic—professional factors and smoking cessation intervention factors) with Korean nurses' intention to implement smoking cessation intervention (Figure 1). Whether nurses have a positive attitude toward smoking cessation intervention depends on the extent to which they perceive advantages and disadvantages of smoking cessation intervention. With regard to social influence, the support experienced from important others in the work environment and behavior perceived in the work environment are expected to play a role in whether nurses perceive themselves as able to implement smoking cessation intervention. With respect to self-efficacy, the nurses who perceive themselves as able to implement smoking cessation intervention are more likely to have the

intention to implement smoking cessation intervention [14].

The results of this study may provide a basis for developing tailored smoking cessation training programs that ensures nurses' optimal implementation of smoking cessation intervention for patients as well as the public.

2. Materials and methods

2.1. Study design

A cross-sectional survey study design was used.

2.2. Participants

A convenience sample of 225 female registered nurses was recruited from a nursing bachelor degree program that was offered for registered nurses with associate's degrees in a college of nursing in Busan, South Korea. To be eligible for the study, a participant had to be a registered nurse who was currently responsible for direct patient care and working in ~15 hospitals with > 100 beds in a large metropolitan city of South Korea. Among eligible individuals, we had a > 98% response rate. This sample size was estimated based on a significance level of 0.05, a power of 0.80, effect size of 0.15 and 14 variables [15]. We excluded 10 incomplete surveys (i.e., over one-third of missing items), resulting in the final sample size of 215.

2.3. Data collection

Upon obtaining approval from the director of the nursing bachelor degree program for data collection, the investigator was able to introduce this survey research study to potential participants of registered nurses during their classes. After explaining the study fully, including the research purpose, participants' rights, and potential benefits and risks, individuals who were interested in participating gave signed informed consent and completed the survey questionnaires. The average time spent on completion of the survey was ~15 minutes. The investigator was available for participants who had any questions and concerns throughout the study. The data were collected from May 2015 to June 2015 and each participant received a small gift valued at US\$5 for their participation in the study.

2.4. Measurements

The I-Change Model consisted of intention as a dependent variable, and predisposing factors and motivational factors as independent variables.

2.4.1. Intention to implement smoking cessation intervention

The nurses' intention to implement smoking cessation intervention was measured by seven items

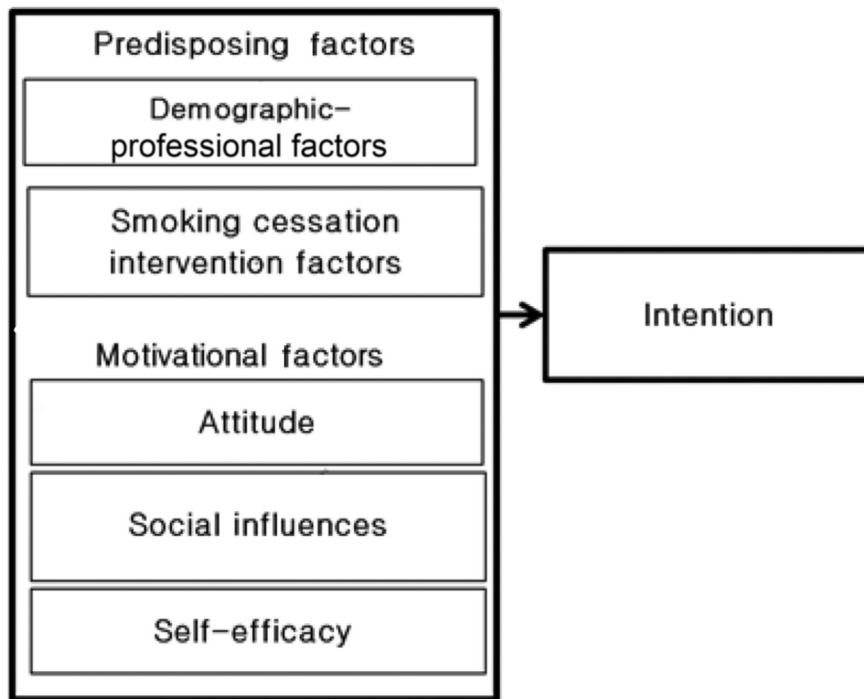


Figure 1. The research model.

developed and modified based on previous studies [14,16] and current literature. An example item included, “I intend to carry out smoking cessation intervention for patient to stop smoking”. Participants were asked to rate their intention to implement smoking cessation intervention for patients on a five-point Likert scale (1 = very strongly disagree, 5 = very strongly agree). Cronbach α of 0.83 in this study indicated good reliability of this instrument. Higher total scores indicated higher levels of intention to implement smoking cessation intervention for patients.

2.4.2. Motivational factors

Attitude toward smoking cessation intervention was measured by using Tobacco Control Attitudes and Belief developed by Gorin [17]. In this study, attitude was defined as the nurses’ judgment that smoking cessation intervention is good or bad, and that they are in favor of or against performing the behavior [17]. This tool consisted of 13 Likert-scaled items (from 1 = very strongly disagree to 5 = very strongly agree) that showed good internal consistency and reliability (Cronbach α = 0.81). Higher total scores suggested more positive attitudes toward smoking cessation intervention.

Social influence was assessed by using the Social Influence tool with three constructs (i.e., support, norms, and modeling) developed by Segaar et al [14]. Social influence was defined as the support experienced from important others in the work environment (e.g., from supervisory staff) and the behavior perceived in the

work environment (e.g., of colleagues). This tool consisted of 11 items rated on a 5-point Likert scale (from 1 = much discouragement to 5 = much support), showing appropriate reliability, Cronbach α = 0.80. Higher total scores indicated a more positive social influence on delivering smoking cessation intervention.

Self-efficacy toward smoking cessation intervention was measured with the modified tool that was developed by Bolman et al [18]. Nurses were asked on how difficult or easy they found it to carry out 10 nurse-specific tasks related to delivering smoking cessation intervention on a 5-point Likert scale ranging from (1) very strong disagree to (5) very strong agree. This self-efficacy tool showed relatively high reliability (Cronbach α = 0.82). Higher total scores indicated higher levels of self-efficacy in implementing smoking cessation intervention for patients.

2.4.3. Predisposing factors

For predisposing factors, demographic–professional factors included age (< 30 or \geq 30 years), marital status (“yes” or “no”), smoking status (“yes” or “no”), smoker in householder (“yes” or “no”), clinical position (staff or charge/head nurse), years of working as registered nurse (< 5 years or \geq 5 years), experience of working in oncology nursing (“yes” or “no”), and perceived work burden (“yes” or “no”). Smoking cessation intervention factors included perceived barrier to smoking cessation intervention (“yes” or “no”), experience of smoking cessation training (“yes” or “no”), and willingness to receive smoking cessation training (“yes” or “no”).

2.5. Data analysis

The analyses were conducted with SPSS version 22.0 (SPSS Inc., Chicago, IL, USA). Effects were considered significant when $p < 0.05$. Descriptive statistics were calculated for all study variables. t tests were conducted to evaluate differences of nurses' intention of smoking cessation intervention on demographic—professional factors and smoking cessation intervention factors. The correlations between intention to implement smoking cessation intervention and the three motivational factors, attitude, social influence, and self-efficacy, were evaluated using Pearson's correlation coefficients. Predictors of intention to implement smoking cessation intervention were examined using hierarchical multiple regression analyses. Nominal variables with dichotomous responses were dummy-coded to be included in the multiple regression analysis.

2.6. Ethical considerations

This study was approved by the Pukyong National University Institutional Review Board for ethical consideration (IRB No. 1041389-2015-HR-011-03; Busan, Korea).

3. Results

3.1. Sample characteristics by intention to implement smoking cessation intervention

Table 1 presents sample characteristics, including demographic—professional and smoking cessation intervention factors, and intention to implement smoking cessation intervention. The study participants of Korean registered nurses had a mean age = 28.82 ± 5.72 years, were married and non-smokers. Forty-five percent of participants reported to have smokers in their household. The majority of participants was staff nurses with < 5 years working experience as registered nurses in hospitals and had perceived work burden. Only 14 participants (6.5%) reported having smoking cessation training before. About half of the participants perceived barriers to carrying out smoking cessation intervention for their patients, but reported that they were willing to receive smoking cessation training.

The mean total score of intention was 21.71 ± 4.51 , indicating moderate intention to implement smoking cessation intervention in the future. Working as charge/head nurse ($p = 0.005$), having working experience in oncology nursing ($p = 0.002$), and having no perceived work burden ($p = 0.047$) were significantly associated with higher intention to implement smoking cessation intervention compared to their counterparts. Other demographic—professional factors, such as age, marital status, smoking status, smoker in household, and working years as a nurse, showed no associations with intention to implement smoking cessation intervention.

All selected smoking cessation intervention factors showed significant associations with intention to perform smoking cessation intervention. Participants who perceived no barrier to smoking cessation intervention showed higher levels of intention to implement smoking cessation than persons who perceived a barrier to smoking cessation intervention ($p < 0.001$). Participants with previous smoking cessation training ($p = 0.002$) or expressing willingness to receive smoking cessation training ($p < 0.001$) showed higher levels of intention than those with no previous training or no interest in future training (Table 1).

3.2. Motivational factors and intention to implement smoking cessation intervention

Descriptive statistics of three motivational factors are depicted in Table 1. Overall, the study participants showed a negative attitude toward smoking cessation intervention, but moderate levels of social influence and self-efficacy. Significant moderate bivariate correlations were observed between intention to implement smoking cessation intervention and attitude ($r = 0.51$, $p < 0.001$), social influence ($r = 0.54$, $p < 0.001$), and self-efficacy ($r = 0.51$, $p < 0.001$; Table 2).

3.3. Factors affecting Korean registered nurses' intention to implement smoking cessation intervention

For hierarchical regression analysis, the Durbin—Watson test score was 1.984 with no correlations among residuals. The tolerance ranged from 0.72 to 0.93 (> 0.10) and the variance inflation factor ranged from 1.21 to 1.57 (< 10), which showed that no variables exhibited multicollinearity. Therefore, it appeared that a regression model would be appropriate.

Table 3 displays hierarchical multiple regression analyses to determine factors influencing Korean nurses' intention to implement smoking cessation intervention. Three-step hierarchical regressions were conducted: demographic—professional factors (i.e., age, marital status, smoking status, smokers in household, clinical position, years of working as registered nurses, experience of working in oncology nursing, and perceived work burden) for Step 1; smoking cessation intervention factors (i.e., perceived barrier to smoking cessation intervention, experience of smoking cessation training, and willingness to receive smoking cessation training) for Step 2; and motivational factors (i.e., attitude, social influence, and self-efficacy) for Step 3.

The first model resulted in 7% of the variance in explaining intention to implement smoking cessation intervention ($F = 3.112$, $p = 0.002$). Clinical position as a charge/head nurse ($p = 0.018$) and oncology nursing experience ($p = 0.002$) were significant in predicting the nurses' intention, but other demographic—professional factors, such as smoking status,

Table 1. Intention to implement SCI according to predisposing factors ($n = 215$).

Characteristics	Categories	n (%)	Intention to perform SCI		
			mean \pm SD	t	p
Predisposing factors					
Demographic—professional factors					
Age (mean \pm SD: 28.82 \pm 5.72 y)	< 30	161 (74.9)	21.54 \pm 4.28	-1.005	0.306
	\geq 30	54 (25.1)	22.22 \pm 4.38		
Marital status	No	185 (86.0)	21.61 \pm 4.43	-0.805	0.422
	Yes	30 (14.0)	22.30 \pm 3.45		
Smoking status	No	204 (94.9)	21.66 \pm 4.26	0.314	0.764
	Yes	11 (5.1)	22.10 \pm 5.21		
Smokers in household	No	119 (55.3)	22.01 \pm 4.30	-1.156	0.243
	Yes	96 (44.7)	21.33 \pm 4.32		
Clinical position	Staff nurse	184 (85.6)	21.37 \pm 4.14	-2.283	0.005
	Charge/head nurse	31 (14.4)	23.70 \pm 4.79		
Years of working as RN	< 5	138 (64.2)	21.40 \pm 4.32	-1.395	0.165
	\geq 5	77 (35.8)	22.25 \pm 6.41		
Experience of working in oncology nursing	No	157 (73.0)	21.15 \pm 4.16	3.191	0.002
	Yes	58 (27.0)	23.32 \pm 4.37		
Perceived work burden	No	80 (37.2)	22.45 \pm 4.39	1.945	0.047
	Yes	135 (62.8)	21.27 \pm 4.22		
SCI factors					
Perceived barrier to SCI	No	94 (43.7)	23.09 \pm 4.10	4.314	< 0.001
	Yes	121 (56.3)	20.63 \pm 4.18		
Experience of smoking cessation education	No	201 (93.5)	21.46 \pm 4.21	-3.210	0.002
	Yes	14 (6.5)	25.21 \pm 4.31		
Willingness to receive smoking cessation training	No	106 (49.3)	20.12 \pm 3.86	-5.706	< 0.001
	Yes	109 (50.7)	23.25 \pm 4.18		
Motivational factors					
Attitude			26.39 \pm 4.10		
Social influence			31.32 \pm 7.59		
Self-efficacy			34.20 \pm 5.64		
Intention to implement SCI			21.71 \pm 4.31		

RN = registered nurse; SCI = smoking cessation intervention.

smokers in household, and perceived work burden, were not significant. Addition of smoking cessation intervention factors added 17% of the variance to Model II, resulting in 24% of adjusted R^2 ($F = 7.251, p < 0.001$). In addition to clinical position as a staff nurse ($p = 0.047$) and no oncology nursing experience ($p = 0.007$), perceived barrier to ($p < 0.001$) and no

interest in smoking cessation training ($p < 0.001$) were significantly associated with lower intention to implement smoking cessation intervention. Three motivational factors significantly added 21% of the variance to the final model. In addition to perceived barriers to smoking cessation intervention ($\beta = -0.128, p = 0.023$), and willingness to receive smoking cessation training ($\beta = 0.123, p = 0.034$), more positive attitude ($\beta = 0.203, p = 0.002$), higher social influence ($\beta = 0.292, p < 0.001$), and higher self-efficacy toward smoking cessation intervention ($\beta = 0.151, p = 0.021$) were predictive of higher levels of nurses' intention to deliver smoking cessation intervention. No demographic—professional factors turned out to be significant predictors in Model III. These factors together explained 45% of the nurses' intention to implement smoking cessation intervention ($F = 13.809, p < 0.001$). Among selected factors from the I-Change Model, three motivational factors of attitude, social influence, and self-

Table 2. Correlation between attitude, social influence, self-efficacy and intention to implement smoking cessation intervention ($n = 215$).

Characteristics	Intention to implement smoking cessation intervention	
	r	p
Attitude	0.512	< 0.001
Social influence	0.546	< 0.001
Self-efficacy	0.511	< 0.001

Table 3. Factors affecting intention to perform smoking cessation intervention.

Model	Model I				Model II				Model III			
	B	β	<i>t</i>	<i>p</i>	B	β	<i>t</i>	<i>p</i>	B	β	<i>t</i>	<i>p</i>
Characteristics												
Age	0.056	0.075	0.531	0.596	0.064	0.085	0.664	0.507	0.026	0.035	0.323	0.747
Marital status* (1 = Yes)	-0.609	-0.049	-0.562	0.575	0.079	0.006	0.077	0.938	0.010	0.001	0.012	0.990
Smoking status* (1 = Yes)	1.399	0.095	1.412	0.160	0.825	0.056	0.877	0.381	1.269	0.086	1.584	0.115
Smokers in household* (1 = Yes)	-0.494	-0.057	-0.861	0.390	-0.163	-0.019	-0.312	0.755	0.110	0.013	0.248	0.805
Clinical position* (1 = charge/head nurse)	2.549	0.208	2.388	0.018	1.939	0.158	2.001	0.047	0.904	0.074	1.087	0.278
Years of working as RN	-0.007	-0.088	-0.642	0.522	-0.009	-0.117	-0.942	0.347	-0.005	-0.060	-0.568	0.571
Experience of working in oncology nursing* (1 = Yes)	2.054	0.212	3.184	0.002	1.602	0.165	2.730	0.007	0.931	0.096	1.850	0.066
Perceived work burden* (1 = Yes)	-0.921	-0.103	-1.506	0.133	-0.623	-0.070	-1.120	0.264	-0.259	-0.029	-0.548	0.584
Perceived barrier to smoking cessation intervention* (1 = Yes)					-0.171	-0.246	-3.879	< 0.001	-0.089	-0.128	-2.287	0.023
Experience of smoking cessation training* (1 = Yes)					1.858	0.107	1.647	0.119	1.602	0.092	1.666	0.097
Willingness to receive smoking cessation training* (1 = Yes)					2.254	0.262	4.144	< 0.001	1.055	0.123	2.136	0.034
Attitude									0.214	0.203	3.157	0.002
Social influence									0.166	0.292	4.754	< 0.001
Self-efficacy									0.115	0.151	2.333	0.021
Constant	18.500				24.076				8.342			
<i>R</i> ²	0.108				0.282				0.492			
Adjusted <i>R</i> ²	0.073				0.243				0.456			
<i>F</i>	3.112				7.251				13.809			
<i>p</i>	0.002				< 0.001				< 0.001			

*Dummy coded. RN = registered nurse.

efficacy were the strongest predictors of intention to implement smoking cessation intervention among Korean registered nurses.

4. Discussion

Using the I-Change Model, we examined associations of motivational factors (i.e., attitude, social influence, and self-efficacy) and selected predisposing factors (i.e., demographic—professional factors and smoking cessation intervention factors) with Korean nurses' intention to implement smoking cessation intervention. Selected motivational and predisposing factors together explained > 45% of the nurses' intention to carry out smoking cessation intervention. Although no perceived barriers and willingness to receive smoking cessation training were significantly associated with higher levels of

intention to implement smoking cessation delivery, three motivational factors were the strongest predictors of Korean nurses' intention.

Nurses with positive attitude towards smoking cessation intervention showed significantly higher intention to deliver smoking cessation intervention for their patients. This result is consistent with previous studies that reported a significant relationship between a positive view of smoking cessation intervention and intention to implement smoking cessation intervention among Dutch practice nurses [16,19]. A significant relationship between positive attitude and frequent rate of smoking cessation activity was reported among various health care professionals, such as primary care providers in the US [20], and dentists and dental students in Iran [7]. These findings suggest that nurses must believe that smoking is a threat and smoking cessation will be beneficial for them to be better engaged in

smoking cessation intervention for their patients. The training program should be designed to deliver strong evidence about the benefits of smoking cessation intervention, to facilitate a positive attitude in nurses toward smoking cessation.

Our study found that nurses who perceived a more positive influence from their social environment toward smoking cessation intervention delivery showed greater intention for delivery. In other words, nurses are more likely to counsel patients on smoking cessation if they perceive that they will receive support from supervisors, colleagues and patients. This is consistent with previous studies [14,19,21], indicating that positive social influences from important others of work environment play a crucial role in the adoption process of smoking cessation interventions. However, Bolman et al [18] reported that social influence did not affect the intention to use a smoking cessation protocol among Dutch nurses with > 8 years' experience of cardiac nursing [18]. Our nurses were working in various clinical areas and were younger and less experienced than Dutch nurses in Bolman et al study [18]. Confirmatory studies are needed for nurses who have more experience in specific clinical areas. Systematic team approaches in the work environment may encourage positive social influence toward smoking cessation intervention among nurses.

Consistent with previous studies of nurses' intentions [20,22], we found that nurses who perceived themselves to be able to implement smoking cessation intervention showed greater intention to provide such intervention. Low expectation of self-efficacy has frequently been reported as a major barrier to the provision of smoking cessation [23]. Half of our nurses perceived barriers to implementing smoking cessation intervention, which was associated with lower intention. This is in line with other studies reporting that there are structural and practical barriers for not implementing smoking cessation intervention, including lack of skill and time [11,23]. It is important to develop practical, user-friendly training programs and smoking cessation protocols to relieve these barriers, which would increase the intention of nurses to implement smoking cessation intervention [13].

This study had several limitations. First, the cross-sectional study design precluded our ability to determine a causal relationship among variables. Second, the homogeneous study sample of registered nurses recruited from one academic program in a large metropolitan city limited the generalizability of the results and may have been a source of selection bias. Further longitudinal prospective, multi-site studies are needed. Third, among the factors of the I-Change Model, we did not include other influential factors such as awareness and information factors in the current study. These factors should be incorporated into the pool of independent variables in future research in order to describe more comprehensive pictures underlying the intention of nurses to implement smoking cessation intervention.

In conclusion, positive attitude, positive social influence and high self-efficacy toward smoking cessation intervention were predictors of nurses' intention to implement smoking cessation intervention. The current study findings clearly demonstrate that the I-Change Model is useful to predict nurses' intention to implement smoking cessation intervention in one city in South Korea. There is an urgent need for evidence-based smoking cessation training programs for health care professionals, and the I-Change Model could serve as a good guideline for developing a tailored training program for Korean nurses.

Conflicts of interest

All authors declare no conflicts of interest.

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References

1. World Health Organization (WHO). WHO global report: mortality attributable to tobacco [Internet]. Available from: http://www.who.int/tobacco/publications/surveillance/rep_mortality_attributable/en/ [accessed 03.03.15].
2. Ministry of Health & Welfare. Guideline of smoking cessation treating. Seoul: Ministry of Health & Welfare; 2015.
3. Organization for Economic Cooperation and Development. Health at a glance 2013. OECD indicators. OECD Publishing; 2013.
4. Oh J, Lim MK, Yun EH, et al. Cost and effectiveness of the nationwide government-supported smoking cessation clinics in the public of Korea. *Tob Control* 2013 May;22(e1):73–7.
5. Paek YJ, Lee S, Kim YH, et al. Effect on smoking quit rate of telling smokers their health risk appraisal in terms of health age: a randomized control trial. *Asian Pacific J Cancer Prev* 2014 July; 15(12):4963–8.
6. Fiore MC, Jaen CR, Baker TB, et al. Clinical practice guideline: treating tobacco use and dependence [Internet]. Washington, DC: US Department of Health and Human Services; 2008. Available at: <http://stacks.cdc.gov/view/cdc/6964> [accessed 03.12.15].
7. Ravazi SM, Zolfaghari B, Doost ME, et al. Attitude and practice among dentist and senior dental students in Iran toward tobacco cessation as an effort to prevent oral cancer. *Asian Pacific J Cancer Prev* 2015 Feb;16(1):333–8.
8. Rice VH, Hartmann-Boyce J, Stead LF. Nursing interventions for smoking cessation. *Cochrane Database Syst Rev* 2013 Aug 12;8: CD001188. <http://dx.doi.org/10.1002/14651858.CD001188.pub4>.
9. Oh BJ, Shin SR. A comparison on the tobacco control intervention, barriers, and facilitators between oncology nurses and general nurses in clinical practice. *J Korea Adult Nurs* 2005 Sep;17(4): 529–38.
10. Shin SR, Oh BJ. Survey on frequencies of smoking cessation intervention for patients among clinical nurses. *J Korea Acad Nurs* 2006 Feb;36(1):144–50.
11. Shin SR, Oh BJ. Barriers to smoking cessation intervention among clinical nurses. *J Korea Adult Nurs* 2005 Mar;17(1):139–48.
12. De Vries H, Mesters I, Van de Steeg H, et al. The general public's information needs and perceptions regarding hereditary cancer: an

- application of the Integral Change Model. *Patient Educ Couns* 2005 Feb;56(2):154–65.
13. Segaar D, Willemsen MC, Bolman C, et al. Nurse adherence to a minimal-contact smoking cessation intervention on cardiac wards. *Res Nurs Health* 2007 Aug;30(4):429–44.
 14. Segaar D, Bolman C, Willemsen MC, et al. Determinants of adoption of cognitive behavioral interventions in a hospital setting: example of minimal-contact smoking cessation intervention for cardiology wards. *Patient Educ Couns* 2006 May;61(2):262–71.
 15. Faul F, Erdfelder E, Lang AG, et al. G*Power 3: a flexible statistical power analysis for the social, behavioral, and biomedical sciences. *Behav Res Methods* 2007 May;39(2):175–91.
 16. Smit ES, De Vries H, Hoving C. Determinants of practice nurses' intention to implement a new smoking cessation intervention: the importance of attitude and innovation characteristics. *J Adv Nurs* 2013 Dec;69(12):2665–74.
 17. Gorin SS. Predictors of tobacco control among nursing students. *Patient Educ Couns* 2001 Sep;44(3):251–62.
 18. Bolman C, De Vries H, Mesters I, et al. Factors determining cardiac nurses' intentions to continue using a smoking cessation protocol. *Heart Lung* 2002 Jan–Feb;31(1):15–24.
 19. Leitlein L, Smit ES, de Vries H, et al. Factors influencing Dutch practice nurses' intention to adopt a new smoking cessation intervention. *J Adv Nurs* 2011 Oct;68(10):2185–94.
 20. Applegate BW, Sheffer CE, Crews KM, et al. A survey of tobacco-related knowledge, attitudes and behaviours of primary care providers in Mississippi. *J Eval Clin Pract* 2008 Aug;14(4):537–44.
 21. Hall S, Marteau TM. Practice nurses' self-reported opportunistic smoking cessation advice in three contexts. *Nicotine Tob Res* 2007 Sep;9(9):941–5.
 22. Wetta-Hall R, Berry M, Goo MJ, et al. Factors influencing nurses' smoking cessation assessment and counseling practice. *J Addict Nurs* 2005 Jul–Sep;16(3):131–5.
 23. Sarna LP, Wewers ME, Brown JK, et al. Barriers to tobacco cessation in clinical practice: report from a national survey of oncology nurses. *Nurs Outlook* 2001 Jul–Aug;49(4):166–72.