

Nurses' perception of promoting and impairing factors in intervention for smoking cessation program in a hospital

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Abstract

Aim: An analysis of opinions from nurses on factors relevant to issues related to the intervention for smoking cessation (ISC) program (ISCP).

Methods: A voluntary questionnaire concerning the ISCP was distributed to 689 nurses, and they were asked to fill in the responses with their names, genders, and smoking status noted (response rate: 74.6%). Written informed consent for participation in the survey was obtained from the participants.

Results: Of the female (n=488) and male (n=12) nurses with mean age of 32.7±9.5 years, 5.8% (n=28) were current smokers. The mean smoking rate of the current smokers was 10.6±7.5 cigarettes per day, their starting smoking age was 18.6±4.2 years, and the precontemplation period relatively high (35.7%). On factor-categorization, the promoting and impairing factors accounted for 350 (24 category items) and 393 (25 category items) registration units, respectively. Special features of the 3 major categories in a descending order were: personal reasons of the patients per se > personal reasons of nurses per se > environment surrounding nurses. Personal factors for the patients per se included: 1) treatment and surgery to alleviate disease exacerbation of patients, 2) high levels of desire/awareness of quit smoking in patients, 3) low levels of desire/awareness of smoking cessation in patients, and 4) smoking serves as the relieving method for stress of patients. Factors for nurses per se included: 1) adequate knowledge and skills/techniques of nurses, and 2) inadequate knowledge and skills/techniques of nurses. With regard to the environment surrounding nurses: overworked with limited time and staff was given as necessary factors for supporting the current work environment of nurses.

Discussion: In the ISCP, when patients were hospitalized, a smoke-free environment was confirmed. Nicotine-replacement therapy, psychological and behavior therapies were introduced beginning with the first hospital visit, and relevant educational support to promote smoking cessation was continued after discharge. In addition, it is necessary to educate nurses via on-the-job training (OJT) about information and techniques related to ISC and ISCP.

Keywords: Intervention for smoking cessation, hospital nurses, relevant factors

1. Introduction

Smoking is one of the health-impairing factors that induces cancer and ischemic cardiovascular disease. The international classification of Disease-10 (ICD-10)¹⁾ classifies tobacco-smoking as a form of nicotine-dependence. Additionally, smoking has been known to not

only induce diseases in smokers themselves but also increase the risk in others of various conditions, including respiratory disease and sudden infant death syndrome via passive smoking.²⁾ In a national survey of the smoking rate in 2015, Japan Tobacco Co. Ltd. (JT) found a decrease in tobacco use of 30.3% in Japanese male adults and a

consistent unchanged rate of 9.8% in women:³⁾ a smoking trend that remains high.

In 2000, the Ministry of Health, Labor and Welfare of Japan has adopted the general goal of improving the quality-of-life and extending the lifespan of the Japanese people by incorporating Healthy Japan-21, and in 2003 took further preventive measures against passive smoking as part of its health-promotion agenda by establishing concretely the quantitative targets for the smoking rate and promoting a smoke-free strategy. In this manner, the government aims to achieve reductions in the risk factors for lifestyle-related disease due to smoking in Japan as a whole over the next 10 years.⁴

As many patients are known to be susceptible to further disease contraction after admission to the hospital, especially smoking-related cardiovascular diseases,^{5,6} and where strict preoperative preventive measures are required for patients susceptible to postoperative complications, maintaining smoking cessation is therefore imperative.⁷ Furthermore, as smoking is discouraged in hospitals, the tendency and opportunities for patients to smoke in hospitals have been drastically reduced. As such, the role of nurses who can perform ISC counseling has become highly critical.⁸ Accordingly, Rice has reported that marked effects to discourage smoking (i.e. fewer smokers) among staff engaged in healthcare duties, especially the numerous nurses, has been established: viz., an increase of 1.4 fold in smoking cessation rate (i.e. number of cigarettes/day) has been registered in a study on the effectiveness of ISCP for nurses.⁹ Although Rice's effective Approach-5A has yielded useful results, the method has yet to be affirmatively adopted by ISC-promoting nurses in the course of caring for smoking patients.¹⁰ Previous studies on causative factors related to ISCP with respect to tobacco knowledge/awareness, smoking behavior of nurses, ISC-associated attitude and confidence have been conducted;^{10,11} however, investigations of the promotional and impairing factors have been limited, despite ample data pertaining to patients and treatment wards being freely available. Therefore, the present study asked nurses working in hospital wards to fill out a questionnaire on their

perceptions of factors promoting and impairing the ISCP. As a qualitative analysis, this preliminary study aimed to clarify issues for formulating practical and effective ISCP for nurses working at hospitals.

2. Methods

2.1 Subjects

A total of 689 nurses working at ~~in~~ a university hospital O participated in the study. After having been given an oral explanation of the purpose of study, nurses were asked to fill out the study questionnaire. The questionnaires were collected via ballot box. A total of 513 questionnaires (response rate: 74.6%) were collected. Incomplete (n=13) were discarded and excluded from the analysis, resulting in an effective response count of 500 (effective response rate: 73.0%).

The environment was not completely designed for ISCP, although every effort was made to encourage stop smoking: viz., smoking was not allowed in the entire area of the hospital, and patients had to sign 'an agreement on cessation of smoking' with no possession of lighters on admission. The aforesaid agreement was similarly applied to out- and in-patients. However, tobacco was commercially available at stores within the hospital premises, or patients were not regulated once they stepped out of their wards. An ISCP was, in fact, not instilled at the time of study.

2.2 Composition of Questionnaire

The questionnaire solicited the following: (1) obligatory basic particulars such as the age, gender, smoking or non-smoking status, daily smoking rate (cigarette count/day), starting age for smoking, current interest in ceasing smoking and (2) voluntary information such as opinions concerning promotional and inhibitory factors for implementing ISC with patients.

2.3 Statistical analysis

Data were verified using the Berelson content analysis.¹² As for the questionnaire, the responses were scored as 1 registration unit (rU) for each sentence. The content of each rU was then further subdivided into 3 major

categories and named accordingly to the meaning/implication of its content. Subdivision of the categories were performed by 3 research associates without reliability confirmation of the categories. For the subcategories, the analogous rate of categorization was derived using the Scott equation to elucidate the reliability of analytical results.

2.4 Ethical considerations

No penalty or other disadvantageous consequences were imposed on those who chose not to participate in the present study. Personal names were not recorded on the questionnaire, and to further ensure privacy protection, the collected data were not used for purposes other than this study. The above were guaranteed in writing. This study has been approved by the Ethical Committee of the Medical Faculty of Osaka University.

3. Results

3.1 Particulars

Of the 500 subjects enrolled in the analysis, 488 (97.6%) were female and 12 (2.4%) were male nurses ranging from 21 to 60 (mean: 32.7 ± 9.5) years of age without any significant difference $\#$ between the genders.

In addition, 28 of 500 (5.6%) participants were currently active smokers, with significantly more male than female smokers (male: 27.2% vs female: 5.3%). The mean smoking rate of the smokers was 10.6 cigarettes/day, and they started smoking at a mean age of 18.6 ± 4.2 years. With regard to concern about the effects of smoking, a plurality (35.7%) indicated they were unconcerned, while an unconcerned period, while of those who described themselves as being concerned, 32.1% that “they were concerned; however, they were not going to discontinue smoking within the next 6 months”; and 14.3%

commented that “they intend to stop smoking within 1 month”.

3.2 Subjects, registration units (rU) and itemized categories

In the questionnaire, unclear/illegible answers were omitted from the analysis, promotional and impairing factors of ICS registered as 350 and 393 rU, respectively. Categorized results based on similar content or implication were divided into 3 categories for ISC-promotional factors (conditions of patients per se: 7 subcategories; conditions of nurses per se: 11 subcategories; and environment surrounding nurses: 6 subcategories) and 3 categories for ISC-impairing factors (conditions of patients per se: 8 subcategories; conditions of nurses per se: 9 subcategories; and environment surrounding nurses: 8 subcategories) (Tables 1 and 2). The coincidence rates of categorization for the promoting and impairing factors with confirmed reliability, registered 76.8 and 77.1%, respectively.

Table 1: Promoting factors of intervention for smoking cessation (ISC) program (ISCP) compiled from nurses:

List of categories

Category	Subcategory	Number: Subcategory*	rU (%)
Patients per se condition	1. Need of treatment/surgery for disease exacerbation of patients		61 (17.4)
	2. High desire/awareness of patients to quit smoking		60 (17.1)
	5. Cooperation from family members and friends		22 (6.3)
	7. Due to hospitalization		13 (3.7)
	14. Acquired knowledge from talks of personal experience by previous smokers		7 (2.0)
	20. Stable health and psychiatric state		3 (0.9)
	23. Poor awareness or desire to quit smoking		2 (0.6)
Nurses per se condition	3. Adequate knowledge and skill as a nurse		50 (14.3)
	8. Comfort and flexibility with time and other staff		12 (3.4)
	9. High desire to quit smoking in nurses		11 (3.1)
	10. Experience/confidence in having succeeded in ISCP		10 (2.9)
	11. Nurses in a better position to provide support and health knowledge		10 (2.9)
	12. Experienced learning ISC of nurses		9 (2.6)
	15. Smoking and smoke-free status of nurses per se		7 (2.0)
	16. Excellent patient-nurse relationships		7 (2.0)
	18. Responsibility of being a nurse		4 (1.1)
	21. Wish for friendship with and concern for health of patients		3 (0.9)
	22. Age group of nurses		2 (0.6)
	24. Worthiness of ISC		1 (0.3)
Environment involving both parties	4. Effort in promoting ISC at hospital		24 (6.9)
	6. Affirmative and cooperative support from other employees		14 (4.0)
	13. Concrete ISC resources		8 (2.3)
	17. Social background/needs		6 (1.7)
	19. Proper in-house facilities for out-patient smokers		4 (1.1)

*: in high-to-low order of subcategories

Table 2: Impairing factors of intervention for smoking cessation (ISC) compiled by nurses:

List of categories

Category	Subcategory	Number: Subcategory*	rU (%)
Conditions of individual patients	2.Low desire/awareness in patients to quit smoking		68(17.3)
	3.Smoking as a means of stress relief by patients		40(10.2)
	6.High tobacco dependence and habituation		17(4.3)
	7. Lack of cooperation from family members/friends.		16(4.1)
	8.Poor prognosis and disease with limited relationship to smoking		14(3.8)
	13.Lifestyle and health attitude of patient		8(2.0)
	21.Having spare/free time during hospitalization		4(1.0)
	24.Effects on other contracted disease after stopping smoking		2(0.5)
Conditions of individual nurses	1.Overworked with limited time and manpower		76(19.3)
	4.Inadequate knowledge of nurses		33(8.4)
	5.Smoking/non-smoking nurses		22(5.6)
	10.Inappropriate ISC		10(2.5)
	12.Low levels of desire/awareness in ISC of nurses		9(2.3)
	14.Stress level of nurses		8(2.0)
	16.Concern for breakdown of trust relationship with patient		6(1.5)
	17.Lack of confidence on the part of nurses		6(1.5)
	22.Inadequate communication with patients		4(1.0)
	23.Insufficient coordination		4(1.0)
	25.ISC from young nurses more than patients		2(0.5)
Environment involving both parties	9. Environment for possible smoking		11(2.8)
	11.Social largesse/openness		9(2.3)
	15.Hospital staff smokers (other than nurses)		7(1.8)
	18.No opportunity to receive ISC information/education		6(1.5)
	19.Insufficient continuous support		5(1.3)
	20.Lack of cooperation from physicians		5(1.3)

*: in high-to-low order of subcategories

3.3 The following are the top 3 subcategories of promoting factors of ISCP in terms of frequency:

1. Required treatment and surgery to ameliorate/prevent disease exacerbation of patients: viz., “concern of continuous/habitual smoking in patients due to disease morbidity,” “strong causal relationship between smoking and disease,” and “triggered by the need for surgery,” “treatment guidelines on the basis of quitting smoking e” (not being able to undergo surgery).

2. Level of desire/understanding of necessity to cease smoking in patients: viz., “a positive effort in patients to stop smoking,” “patients request to cease stopping,” “patients take interest in stopping smoking, and are motivated to act,” “patients have concrete motives.”

3. Adequate knowledge and skills/technique of the nurses: viz., “possess medical knowledge, and are able to support by theoretically formulating plans,” “able to provide extensive information on the adverse effects of smoking from healthcare providers,” “providing information appropriate to the condition of patients without pushing excessively,” “emphatic approach to carefully transmit information with attention to patients’ own effort.”

3.4 The following are the top 3 subcategories of impairing factors of ISCP:

1. Overworked staff with limited time and manpower: viz., “difficulty in providing stepwise education of

smoking cessation during busy working hours,” “putting priority on other duties above smoking cessation education,” “difficulty with ISC due to reduction in the length of hospital stays,” “shortage of manpower and lack of spare time; therefore lack of opportunity to and physical difficulty in participating in workshops and ISC symposia,” “reduced length of hospital stay,” and “presurgical ISC at the outpatient stage; however, patients are discharged when situation/timing allows for postsurgical support, with only limited opportunistic support/instruction in the ward.”

2. Low levels of desire/concern to cease smoking and poor understanding of the risk of smoking in patients: viz., “little interest even with support/instruction,” “unconcerned attitude/mind-set of patients with regard to smoking cessation,” “a view that smoking is a free-will private matter and the turning of a deaf-ear by patients,” “willful choice of patients; unconcerned and not willing to quit despite knowing the risks,” and “lack of understanding of and interest in patients in smoking cessation.”

3. Smoking as a way to relieve stress for patients: viz., “hospital life and disease are stressful,” “patients think of better mental stress relief with smoking is the best option when bothered by stress-induced mental or physical injury,” “when the stress level and individual opinions/intentions of patients are taken into consideration, it is difficult to offer ISC,” “question as to whether there are sufficient reasons to offer ISC when many treatment and technical problems remain to be tackled,” “in cases where smoking remains the only stress-relieving option.”

4. Discussion

Subcategories 1 and 2 of promoting factors related to conditions of individual patients (i.e. the desire to be smoke-free and the requirements of medical treatment); are the most important factors. The Approach-5A smoke-free guidelines recommended by the agency for Healthcare Research and Quality for nurses are useful not only as a motivational approach to promote smoking-cessation desire in patients, but also for the education of patients with little or no concern about their smoking, or who are

not ready to become smoke-free. In brief, Approach-5A involves: ‘Ask’ (do you smoke?), ‘Advice’ (quit smoking), ‘Assess’ (intention to quit smoking?), ‘Assist’ (decide on a smoke-free day), and ‘Arrange’ (have you quit smoking?).¹³ Due to their hospitalization, patients’ awareness of the advantages of becoming smoke-free is reinforced; and thus they are motivated to try alternative treatments such as nicotine replacement therapy, psychological and behavioral counselling. Additionally, it is difficult for patients to quit once dependency and habituation to smoking have developed. With understanding from family members and friends as well as mental support from nurses using encouraging words and attentive listening, patients may come to develop a desire to be smoke-free.

With regard to the situation of nurses per se, the many responses concerning impairing factors in subcategory 1 emphasized current needs within the support system of nurses, especially where nurses are overworked and with limited manpower. Previous studies^{10,11,15} have documented the need of elevating self-efficacy in patients by performing ISC using knowledge and techniques/skills earned in OJT-based SFSPs in the daily healthcare activity of nurses.

According to psychologist Bandura,¹⁶ self-efficacy which is dependent on the self-confidence and self-reassurance of the individual, is an action that has to be executed to yield a certain result. Additionally, the higher the self-confidence, the more the surroundings enhance this feeling and provide complimentary messages, and the more previously established affirmatively reinforced experiences the individual has, the easier it is for him/her to initiate and persist in the action (i.e. quitting smoking in this case). As such, Approach-5A should be recommended as part of relevant nursing care practice for upcoming ritual of appropriately providing ISC, even for nurses without full OJT knowledge.

Furthermore, concrete plans are required to: i) train advisors/instructors in enforcing ISC; ii) provide mental and technical/skillful support for nurses without advisors; iii) furnish relevant matters beyond the ward; and iv) provide information via e-learning opportunities.

Moreover, smoking nurses should be encouraged to seek counselling via ISC to quit smoking themselves.

To incorporate the environment surrounding the nurses into the ISCP, effort to involve the hospital as a whole in providing ISC, and instilling a sense of shared purpose by all healthcare providers as indicated in subcategory 4.6 of the promoting factors will lead to alleviating the burden on nurses. Advice, cooperation, and a positive attitude with regard to ISC on the part of physicians, who have greater affirmative and direct influence on patients, are especially needed.

As depicted in subcategory 5, 17, and 19 of promoting factors and subcategory 19 of impairing factors, as a result of reduced length of hospital stays, proper ISC cooperation during hospitalization, and follow-up ISC should be initiated for smoker-outpatients who have been discharged. ISC should be provided for the whole process: starting with the first instance when the outpatient arrives for diagnosis, and all along his/her hospitalization and discharge. Not only the specified healthcare provider but also relearn staff should be involved in providing support at all stages of treatment: viz., a system where ISC is being provided and noticed even at one glance, and where the clinical path for ISC is thus standardized throughout the patient's environment. As such, not only the individual nurses per se but also the patients' incorporated hospital environment and social network are included and involved in the system, where nurses are made aware of actions required for ISC, and the hospital as a whole provides ISC for all smoker-patients at all treatment stages with proper education and relevant manuals being available to facilitate realization of the ISC goals.

However, there were certain limitations in our study. The sample-population was small, and a larger sample should be used in future study. Additionally, the need to train and establish a panel of specialists (including physicians, nurses and other hospital staff) to advise smoker-patients immediately on admission, during hospitalization and hospital visits. Smoker-nurses may be biased in executing the ICSP, and therefore a balanced ratio of smoker- and nonsmoker-nurses should be included in the study (albeit no differences were observed in a small

sample-population study). Due to busy work schedule, cooperation from physicians, nurses and other hospital staff was lacking. Therefore, education for all relevant parties in promoting the ISCP is a prerequisite for this program to succeed. An urgent call to establish the aforesaid panel for the sole purpose of ISC should be a priority, because once the panel is established it can uphold the ISCP, and at the same time educate the supporting staff in keeping the ISCP active and useful on a long-term basis.

5. Conclusions

It is clear that nurses and all healthcare providers should adopt the right attitude and acquire knowledge relevant to ISC by adopting the techniques/skills of Approach-5A, as well as understanding the treatment methods and roles taken by of nurses in providing ISC to patients. Physicians, who have great influence on patients, should affirmatively provide ISC, while the hospital as a whole should adopt a comprehensive and thorough policy, and create an environment conducive for ISC promotion. Furthermore, the advisors/instructors supporting the nurses at effectively implementing ISC in medical institutions should also be trained as part of developing a suitable environment and a multifaceted array of useful strategies required for full realization of the ISCP goals.

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