Behaviors and Attitudes towards Smoking Among the Nurses in Japan

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The study was carried to investigate on the actual conditions related to smoking of the nurses working in all medical institutions under a regional medical association in Mie Prefecture (regional medical institutions). Results obtained were as follows: smoking prevalence of female nurses is considered to be equal to that of the general female population in Japan. About 35% of the nurses with the smoking habit had an opinion to quit it, and about 45% of them practiced it seriously. Nearly 80% nurses favored restriction. In the way of thinking related to smoking, more than 90% of the nurses answered that women should not smoke for the health of the fetuses and infants, while only about 30% of them agreed to stop smoking working as members of the medical staff. The survey suggests that anti-smoking program is necessary to develop for smoking nurses working at medical facilities. J Epidemiol, 2000; 10: 344-348

INTRODUCTION

In 1987, World Health Organization (WHO) established “World No Tobacco Day” to realize a “Tobacco Free Society” by the year of 2000. Since then, WHO has been raising a different slogans each year to promote a measure to counter smoking in the world. One of the campaigns in 1999 for the World No Tobacco Day was appealing health professionals and allied health workers to recognize the problems that smoking brings to their own field and their responsibility in terms of personal conduct and appropriate practice 1.

Nurses as the top in number among the medical service workers in Japan are reported to show the higher smoking rate than the general women 2-6. But such surveys were less in number and performance of such survey at the national level has yet not been known 5. Thus, Ohida et al conducted a survey in 14 national hospitals selected randomly on the prevalence of and attitudes towards smoking among nurses 7,8. However, subjects of that survey (Nationwide Survey) were limited to some hospital nurses, who could not represent a wide range of working place including clinics.

It is an occupational mission of the medical workers as nurses to stop smoking as an exemplar to the patients who have to recover their health. As far as the past smoking rate is concerned, it has to be said that the occupational role of the nurses has not been realized accurately. Accordingly, it is necessary to clarify the actual state of getting hold of the factors related to the nurse's smoking behavior to let them to be aware of their mission.

For the purpose of getting hold of awareness related to the actual state and behavior of smoking among the nurses in Japan, a survey at all the medical institutions within a district was carried (the Regional Survey). Finding of the two independent studies similar in design (the Nationwide Survey and the Regional Survey), were also compared.
MATERIALS AND METHODS

The survey was carried at the medical institutions under the Medical Association in Matsuzaka, covering Matsuzaka-shi and 7 suburban towns and villages of Mie Prefecture. Total 1,184 nursing staffs, male and female nurses in 12 hospitals and 67 clinics participated in this survey. There were 130 clinics including 67 with the stationed nurse. A total of 1,163 replies were obtained from 985 nurses in hospitals (99.9%) and 178 nurses in clinics (89.9%), and after omitting 11 questionnaires for incomplete replies, 1,152 cases were analyzed. The survey period was between November, 1995 to January, 1996.

The Regional Survey followed the same method of the Nationwide Survey. In cooperation with the director at each medical facility, the questionnaire was distributed and collected through the chief nurse general. Details of the method have been published elsewhere.

Questions asked were: 1) State of smoking up to date, 2) Experience and idea of anti-smoking, 3) Knowledge related to smoking and health (diseases), 4) Concept about smoking in women and nursing staffs, 5) Sex, age, post, qualification, and home status, and 6) Consciousness of one's own occupation

We compared and examined the results of the Regional Survey with those of the Nationwide Survey. Details of the Nationwide Survey have been published elsewhere.

RESULT

(1) Smoking prevalences in male and female nurses

According to the nationwide survey of national hospitals, smoking prevalence in the nursing staffs, female nurses at 18.5% and male nurses at 67.8%, was higher than that of the general adults in Japan in 1993 (women at 13.8%, and men at 59.8%). According to the regional survey of medical services, 14.6% of female nurses were smoking nearly on the same level as the general women's, and 75.0% of male nurses were smoking much more than the general men did (Smoking rate of the general adults in Japan, 1996: female at 14.2%, male at 57.5%).

In both surveys, the numbers of male nurses were very few in number compared with that of female nurses, 90 and 24 respectively, and hence male nurses were omitted from the following analyses.

In both surveys, as shown in Table 1, smoking prevalence among the nurses by age was low in the twenties and the highest in the thirties. In the regional medical services, smoking rate by institutions revealed 15.7% in hospitals and 9.1% in clinics, being the higher among the hospital nurses.

(2) Comparison of smoking prevalences

In the Regional Survey, smoking rate of the hospital nurses was 15.7%, lower than that of the National Survey. As it was considered to be due to difference in ages of working nurses, we used Mantel-Haenszel test to examine significant difference between these two groups. An apparent difference was noted between both groups (p<0.01), which revealed the fact that difference in smoking prevalence is independent of age factor.

(3) Smoking prevalence by certificate and working departments

The highest smoking prevalence was noted with the psychiatric department (National Survey at 27.6% and Regional Survey at 26.8%), while the pediatric department was the lowest. Certificate, in either survey, LPNs (licenced practical nurses) showed the higher level than RNs (registered nurses) (National Survey: 16.3% with RNs and 28.7% with LPNs; Regional Survey: 11.6% with the former and 18.6% with the latter). There are two certifications for nurses in Japan. 57% of the nursing staff in Japan are RNs (male and female), while 43% are LPNs (male and female).

In the Regional Survey, both certificate and type of medical facilities (hospitals and clinics), the higher smoking prevalence was noted with the hospital nurses, and it was higher with LPNs, in both hospitals and clinics (Table 2).

| Age   | The Nationwide Survey (%) | The Regional Survey (%) |
|-------|----------------------------|-------------------------|
| 20-24 | 42 / 419 (10.0)            | 17 / 155 (11.0)         |
| 25-29 | 51 / 349 (14.6)            | 25 / 175 (14.3)         |
| 30-34 | 68 / 294 (23.1)            | 38 / 181 (21.0)         |
| 35-39 | 82 / 335 (24.5)            | 35 / 166 (21.1)         |
| 40-44 | 76 / 364 (20.9)            | 21 / 163 (12.9)         |
| 45-49 | 40 / 202 (19.8)            | 14 / 128 (10.9)         |
| 50+   | 51 / 250 (20.4)            | 15 / 160 (9.4)          |
| Total | 410 / 2,213 (18.5)         | 165 / 1,128 (14.6)      |

Numerator: number of smoker
Denominator: number of replies
(4) Consciousness about smoking and anti-smoking behavior of smokers

In both surveys, more than 96% of the nurses had an opinion that a hospital or clinic as a working place for them should have to be kept as non-smoking area taking a measure or another, including 10% of those who thought of limited smoking at least.

As per smoking in women, those who agreed with the opinion that “women should not smoke for the health of fetuses and infants”, were noted as high as 91%, and nearly the same number of nurses agreed with the opinion that “women should not smoke for common sense”. Reactions in both surveys, as yes or no to the opinion that the medical staff should not smoke were noted at or about 30% each, and those who agreed with the opinion that “even medical professionals may smoke outside of working hours” were noted at 64.3% and 58.8% respectively. Those who disagreed with the opinion that “nurses may smoke just as many other professionals do”, remained at 22.6% and 26.5% respectively (Table 3).

Not shown in the table, among the smoker RNs, 43.8% of them in the National Survey and 44.5% of them in the Regional Survey had tried seriously to stop smoking, and including those who once thought of staying away from smoking, it was more than 78% in both surveys.

DISCUSSION

The two surveys (the Nationwide Survey and the Regional Survey), carefully arranged to improve the collection rate, assuring to keep privacy with unsigned reply (sealed envelope collection) and excluding an institution which did not follow the instructed way in collection, revealed very high recovery

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Table 2. Smoking rate by type of medical facility, certificate and age group (females only).

| Medical Services | Certificate | 20-29years(%) | 30-39years(%) | 40-49years(%) | 50+years(%) | Total(%) |
|------------------|-------------|---------------|---------------|---------------|-------------|---------|
| Hospitals        | R.N.        | 21 / 214 (9.8)| 27 / 196 (13.8)| 18 / 115 (15.7)| 6 / 64 (9.4) | 72 / 598 (12.2) |
|                  | L.P.N.      | 17 / 71 (16.3)| 40 / 105 (38.1)| 16 / 123 (13.0)| 7 / 56 (12.5) | 76 / 355 (21.4) |
| Clinics          | R.N.        | 0 / 5 (0)     | 2 / 18 (11.1)  | 0 / 8 (0)     | 0 / 16 (0)   | 2 / 47 (4.3)   |
|                  | L.P.N.      | 7 / 38 (18.4) | 4 / 29 (14.8)  | 1 / 41 (2.4)  | 2 / 23 (8.7) | 14 / 131 (10.8) |

Numerator : number of smoker
Denominator : number of replies
R.N.: registered nurses
L.P.N.: licensed practical nurses

Table 3. Opinions related to smoking (females only).

| Smoking among women | The Nationwide Survey | The Regional Survey |
|---------------------|-----------------------|---------------------|
|                     | Agreed | Disagreed | Not specified | Total | Agreed | Disagreed | Not specified | Total |
| Women should not smoke for health of the fetuses and infants | 92.9% | 2.0% | 5.1% | 100% | 91.1% | 4.8% | 4.6% | 100% |
| Women should not smoke from social common sense stand point | 26.9% | 29.7% | 35.1% | 100% | 31.5% | 23.9% | 44.6% | 100% |
| Women may smoke without distinction from men | 29.4% | 28.4% | 42.2% | 100% | 27.0% | 31.3% | 41.7% | 100% |
| Smoking among nurses | | | | | | | | |
| Nurses should not smoke as medical professionals | | | | | | | | |
| Even medical professionals may smoke outside of work hours | | | | | | | | |
| Nurses may smoke just as many other professionals do | | | | | | | | |

Do you think that smoking should be prohibited in the hospital you are working? | 15.1% | 81.6% | 3.3% | 100% | 19.9% | 76.8% | 3.3% | 100% |
rates in such kind of surveys related to smoking with high reliability. These can be used as important references for the anti-smoking campaign in Japan.

In the Nationwide Survey, 14 hospitals were sampled at random from the institutions in Japan being nearly of the same scale as any one of those in Japan as far as mean bed numbers are concerned. Thus, it was considered that the established representation is ensured.

Meanwhile, there is possibility of further studies to generalize such smoking rate obtained in this study among the whole nurses. To extend the range of subjects to all medical institutions in the whole country, one survey was carried with the national medical institutions. Those working in the national medical services are only about 4% of the whole nursing staff members in Japan. However, the regional survey of medical services located in a completely different district to which the same way as that for the nationwide national hospital was applied, revealed the same values in many cases. Thus, the result related to smoking of the nurses obtained by those two surveys may not differ much from the state of the whole nurses.

Difference in smoking rate of the hospital nurses in both surveys was recognized in comparison after adjustment of ages, and certificate. Smoking prevalence in both surveys showed the lower level in the Regional Survey. Accordingly, such difference in smoking rate of hospital nurses in two surveys can be considered depending on the regional factor. The smoking prevalence obtained by Kobayashi carried with the same method was 20.3%, where it was carried in larger cities than that in the nationwide survey of national hospitals, and the regional medical services located far apart from the large cities. Thus, it is considered that among Japanese nurses the higher smoking rate is noted in the larger cities.

Smoking prevalence in the nursing staffs is considered to be higher both in males and females than that of the general adults. The male nurses showed the higher levels in both surveys. On the other hand, the female nurses were noted at the higher level in the nationwide survey of national hospitals and the report of Kobayashi, but it was noted at the same level as that of the general adults in the regional survey. However, (1) This region was located apart from a large city, (2) Hospital nurses showed the higher level than that of the general female adults, (3) Smoking rate of the nurses in clinics was low, but in consideration of the fact that the nurses working in clinics are counted for ca. 18% in Japan, and nearly all of the nurses work in hospitals, smoking rate of the whole working nurses in Japan is estimated to be high. Further, it is supported by the fact that according to the survey carried in 3 hospitals in Tokyo by Mori, the nurses are reported to smoke ca. 1.5 times higher than that of the general female adults. Oshima et al. also reported after their survey in a suburban district, Osaka, that a high smoking rate with the nurse compared with other occupations was noted. Meanwhile, the result related to the nurses refers to the same trend not only in Japan but also in the world.

When smoking prevalence is studied by ages, in both surveys, it is characteristic that the higher level is noted in their thirties than that in their twenties whose level being lower than that of the general female adults. Specially it was high in their thirties and forties. It is suggested that the smoking behavior of the newly assigned nurses are influenced by their seniors, since in many studies it is reported that smoking behavior of the nurse is influenced by their colleagues and seniors. Further, such trend is also noted in the report of Kobayashi who surveyed smoking behavior of the nurses working in four highly advanced national medical institutions in large cities as Tokyo and Osaka. Accordingly in future, it is important to give some smoking cessation programmes to the newly assigned nurses in Japan to promote the anti-smoking campaign.

In the Regional Survey of the present study, the nurses working in both hospitals and clinics participated. As shown in Table 2, the higher smoking prevalence was noted among the hospital nurses at each age level. Thus, in hospitals, where a number of nurses are working, might be used to be influenced by their senior smokers. It corresponds with the reports of many researchers. Where it is stated that the nurses are easily influenced by the smoking behavior of their colleagues and seniors. Further, smoking prevalence of RNs is lower than that of LPNs. In general the former is of the college graduate where higher scholarship is required, which possibly makes it lower in smoking rate compared with LPNs. In fact, smoking rate related to the educational courses in the USA is low with those with the higher education, and the same result was obtained in Japan which agreed with the result of present study.

Many reports are available stating that the smoking behavior of nurses is related to their stresses. In this study, no item related to stress was included, so that the relationship between stress and smoking was not studied. However, those working in the psychiatric department showed the higher smoking prevalence in Wagner report. Thus, it is necessary to study its relation to stresses, what factor in the psychiatric field is connected to the smoking behavior.

It was clarified from this study that there were many smoking nurses, but most of them wanted to stop it, and it is necessary to give some smoking cessation programmes to those working in the medical field, including the nurses. However, although most of them agreed with the opinion that "women should not smoke for the health of fetuses and infants", and more than 90% of them accepted to have the whole hospital space as the area of non-smoking or at least limited smoking, not many of them agreed to the opinion that "nurses should not smoke as medical professionals". In consideration of the high smoking rate of nurses, it shows that there is no idea to play an exemplar role. Physicians' non-smoking habit has been accelerated by their consciousness related to the occupational mission, social requests and improvement of their knowledge, but as to the nurses, it is a matter to study further. Ant-smoking
support is necessary for smoking nurses working in the medical fields. For getting maximum output, smoking cessation programmes should have to be incorporated in nursing education at hospitals. 

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