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The smoking rate of Japanese nurses is decreasing: An Overview of Japanese Situation

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Abstract

Back ground: The higher smoking prevalence among nurses is a global trend. However, the Japanese Nursing Association says that nurses smoking rate are also declined. Differences in these smoking rate may be cause to the study subjects. Moreover, since many reports have been written in Japanese, it is considered the bias is often particularly reported nurses subject. In order to understand the smoking status of Japanese nurse, it is important to follow the article of Japan. So, in the present study, I reviewed current status of the smoking prevalence of nurses reported in Japan. *Method:* Published data were reviewed to demonstrate smoking prevalence rate of Japanese nurses. Data were obtained through published paper or government public data. Japanese-article search was done using the Japan Medical Abstracts Society's *Ichushi* Website. English-article search using the PubMed website of the US National Library of Medicine. *Results:* Most of studies written in Japanese were conducted by Hand delivered. Smoking rate of female nurses were ranged from 7.2% to 32.0% respectively. Trend analysis of the published data showed a decline in smoking rates among Japanese female nurses since 1993. *Conclusion:* The published data show a significant decline in smoking rates among Japanese female nurses since 1993. Although less than five percent of Japanese female nurses now smoke, more work in tobacco control is necessary to help further reduce the burden of smoking, including in nursing schools.

1. Introduction

The epidemic of smoking-caused disease in the twentieth century ranks among the greatest public health catastrophes of the century, while the decline of smoking consequent to tobacco control is surely one of public health's greatest successes. Needless to say, tobacco smoke contains more than hundreds toxic, and at least 69 of them cause cancer. [1]. The smoking prevalence among the Japanese male population steadily decreased from 55.3% in 1989 to 32.2% in 2013. [2] A small change was observed in the smoking prevalence among the Japanese female population for the same period (from 9.4% in 1989 to 8.2% in 2013). [2] Thus, smoking remains a significant health hazard for Japanese people. In particular, it is an important issue for women because who experience pregnancy and childbirth. [1, 3, 4] Although correlations might exist between smoking and lifestyle behavior, very few studies have evaluated this association. [5] In a previous study, significantly higher proportions of nonsmokers reported sleeping for an adequate number of hours per night and participating regularly in physical exercise. [5] Moreover, alcohol consumption was significantly lower in nonsmokers. [5] Although the smoking prevalence among healthcare workers (HCWs) has declined year by year, the smoking prevalence in Japanese HCWs remains high compared with that in other developed

countries. [6]. The proportion of smokers who are physicians has been reported to be lower than that of the general population in Japan, [7, 8] but the smoking prevalence among female nurses has been reported to be higher compared with that among the general female population in recent years. [9, 10] The higher smoking prevalence among nurses is a global trend. However, the Japanese Nursing Association says that nurses smoking rate are also declined. [11] Differences in these smoking rate may be cause to the study subjects. Moreover, since many reports have been written in Japanese, it is considered the bias is often particularly reported nurses subject. In order to understand the smoking status of Japanese nurse, it is important to follow the article of Japan. So in the present study, I reviewed current status of the smoking prevalence of nurses reported in Japan.

2. Subjects and Methods

This study was performed by published data review of the Japanese nurses smoking prevalence rate. Data were obtained through published paper or government public data. Japanese-article search was done using the Japan Medical Abstracts Society's *Ichushi* Website, [12] which is the most large and reliable database on Japanese medical article. The search terms included: tobacco, smoke, nurse, and medical. Various keyword variations and combinations were used. English-article search using the PubMed website of the US National Library of Medicine (NLM). [13] The search terms included: tobacco, smoke, nurse, health personnel, medical, and Japan. Various keyword variations and combinations were used, AND, OR, and *, to identify keyword variations such as Japan and Japanese, and smoke and smoking. The smoking rate of general female were get from the public data of Japanese

government [2]. All data were added to a statistical program (SPSS, Ver. 21) and analyzed using statistical techniques, including mean values and linear regression for trend.

3. Results

Japanese-article

A total of 73 articles were published between 1995 and 2015. I read the title and abstract for all 73 article, then exclude which study subject other than nurse or conference proceedings or mere commentary without study. Finally, 12 studies were included in this review [11, 14 – 24] (Table 1). Except for one local survey, all local surveys were conducted by hand delivered (Table 1). Nationwide survey had often been conducted by nursing associations. Smoking rate of female nurses were ranged from 7.2% to 24.6% respectively.

English-article

A total of 59 articles were published between 1982 and 2016. Of the 59 of the articles, that body text was also written in English was 32. I read the title and abstract for all 32 article, then exclude which study subject other than nurse or not found female smoking rate. Finally, 9 studies were included in this review [9, 10, 25-31] (Table 2). Only three surveys were conducted by hand delivered (Table 2). Smoking rate of female nurses were ranged from 7.2% to 32.0% respectively.

Trend of smoking rate

Annual changes in the smoking rate of general Japanese female and female nurse of this study are shown in table 1. Trend analysis of the published data showed a decline in smoking rates among Japanese female nurses since 1993 ($y = -0.9011x + 1823.1$) (Figure 1). While, smoking rate of general female showed a slight decrease in the same period ($y = -0.0457x + 101.74$) (figure 1).

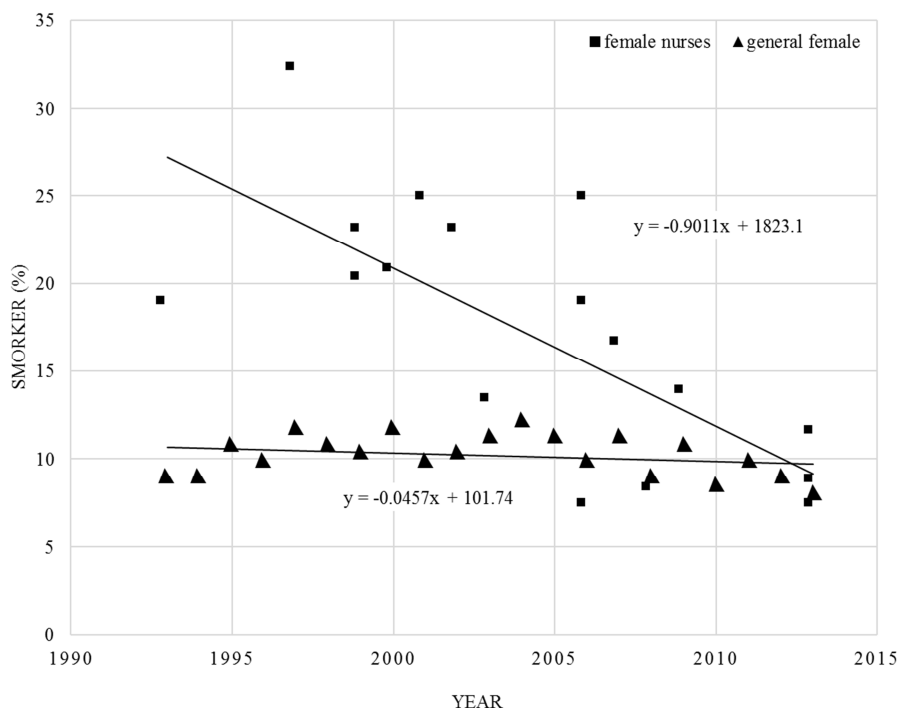


Figure 1. Declining trend in smoking among Japanese female nurses, 1993–2013.

Table 1. Research publications describing the smoking rates of Japanese Nurses (published in Japanese).

Study Year	Location	subjects	Age (mean)	Method	Sample size	Response rate (%)	Smoker ¹ (%)	Reference No.
1999	n.s. (certain prefecture)	Female hospital nurses	20-59 (28.9)	Hand- Delivered	2659	97.1	22.9	14
2000	Hyogo	Female nurses	20-29	Hand-Delivered	453	89.4	20.2	15
2001	Nation wide	Nurses	(34.4)	Postal survey	7357	93.0	24.5	16
2003	Fukui	Hospital staff	(36.8)	Hand-Delivered	915	98.0	13.2	17
2006	Gunma	Hospital staff	(49.3)	Hand-Delivered	300	94.7	24.6	18
2006	Fukuoka	Hospital nurse	20-	Hand- Delivered	624	94.4	7.1	19
2006	Nation wide	Nurses	n.s.	Postal survey	8777	89.9	18.5	20
2007	Fukuoka	Hospital nurses	(30.7)	Hand- Delivered	891	95.1	16.4	21
2009	Kumamoto	Hospital staff	20-	n.s.	326	83.4	13.5	22
2013	Kumamoto	Nurses	20-	Postal survey	1523	19.4	11.3	23
2013	Gifu	Female hospital nurses	(33.7)	Hand- Delivered	260	78.8	8.6	24
2013	Nation wide	Nurses	(41.8)	Postal survey	5819	59.9	7.2	11

1: Smokers include only the percentage of the female nurses. n.s.: Not clearly specified.

Table 2. Research publications describing the smoking rates of Japanese Nurses (published in English).

Study Year	Location	subjects	Age (mean)	Method	Sample size	Response rate (%)	Smoker ¹ (%)	Reference No.
1993	Nationwide	Hospital nurses	(35.7)	Hand-Delivered	2360	97.3	18.6	25
1997	Tokyo	Hospital nurses	(22.0)	Hand-delivered	1572	97.0	32.0	9
1999	Gunma	Female nurses	20-	Postal survey	3000	58.3	19.8	10
2002	Yamanashi	Hospital nurses	n.s.	n.s.	363	84.0	22.6	26
n.s.	Nationwide	Hospital nurses	-59	n.s.	697	91.0	29.0	27
2001-2007	Nationwide	Female nurse	n.s.	Postal survey	49927	u.c.	17.2	28
n.s.	North east of Japan	Female nurse	(37.0)	Secondary data	121	u.c.	9.9	29
2008	Nationwide	Nurses	n.s.	Hand- delivered	2676	82.8	8.0	30
2013	Tottori and Shimane	Nurses	(40.8)	Postal survey	4634	84.8	7.2	31

1: Smokers include only the percentage of the female nurses. n.s.: Not clearly specified. u.c.: Uncalculated

4. Discussion

The present study demonstrate the smoking prevalence of Japanese female nurse on the basis of research papers. In advance of the expected, papers related to the nurses were often those that are published in Japanese. Habit in the nursing field of Japan tries to presentation the results of a study abroad is small. Many of the papers were written in English are those written by physicians and other researchers. Of the English paper of 8 taken up this study, the first author those of nursing faculty is one. Because there is a tendency that the many papers written in Japanese, it is important to review the Japanese paper. I expect future improvement.

In the 1990's, smoking rate of female nurses was higher in general females, which is also a global trend. In a critical review of the article, Rowe and Macleod Clark identified high smoking rates among nurses (39%–48%) in the 1980s, which triggered an increase in the number and quality of international studies on tobacco smoking in the nursing profession [32]. Smith and Leggat identified in an international review that the average smoking prevalence among nurses was around 20% [18]. However, trends in some countries indicate greater reductions in smoking rates. [33]

For example, in the United States of America (USA), a proactive national program designed to help nurses quit smoking [34] has resulted in a progressive decline in smoking prevalence from 33.2% in 1976 to 8.4% in 2003 among 237,648 female nurses, as reported in the Nurses' Health Study [35]. Further, tobacco consumption among nurses in Australia declined from 21% in 1999 [36] to 11% in 2011 [37], and in Canada from 32% in 1982 [38] to 12% in 2002 [39]. Smoking rates among nurses in the United Kingdom (UK) fell from 20% in 1993 [40] to 9% in 2011. [41] Despite these promising figures, many nations remain increasingly burdened by the tobacco epidemic; for example, high smoking rates have been reported among nurses in Italy (50%), [42] Greece (57%), [43] and Turkey (45%). [44]

Research into smoking prevalence among Japanese nurses has been lacking since the 1990s; smoking prevalence among Japanese nurses was reported to be 18.6% in 1993, [25], 32.0% in 1997 [9], 19.8% in 1999 [10]. In the 1990s, fewer Japanese nurses smoked compared with the number of nurse smokers in other countries. The following reasons for high smoking rates in nurses have been cited in past studies: stress in the workplace, [20, 25, 45] influence from peers and society, [9, 10, 20] socioeconomic status, and educational

background. [10] Over the half of Japanese nurses are not have bachelor degree. In 2013, only 29% of nurses is a four-year college graduate. [46] The relationship between education and smoking rate is a well-known fact not limited to the nurse. Many Japanese nurses had been smoking since they were students. [47, 48] Smoking prevalence among female nursing students has been reported as 23.5%, which was higher than that among the general Japanese female population aged 20–29 years (21.9%); [48] therefore, many nurses who are smokers might have already been smokers at the time of their employment. Some nurses might have started smoking under the influence of their colleagues, these statistics suggest that job-related stress is not the cause of starting to smoke. But most recent, Smoking rate of Japanese nurse were declined. [49] Because nurses are involved in patient health management, reducing the smoking rate in this group of workers is an important occupational health challenge.

With an overview of the data of this study, around 2000's, smoking rate of female nurse was higher in the general females. Smoking rates decrease of nurses is observed after that. One of the reasons is thought be Japan Nursing association has declared the alert of tobacco control for the nurse. [50] After this declaration, non-smoking movements were started from a large hospital. And now, smoking rates of nurses has decreased to equal to the general public level. Another big factor is, medical service fees has been revised in 2006, the non-smoking therapy has become the insurance application. Hospital site non-smoking became necessary for the insurance application. And it began with a large-scale hospital. There are four of the paper in 2006 and 2007 [18-21], smoking rates of nurses is observed from 7.1 percent to 24.6 percent. Although some differences due to survey location, probably a low smoking rates hospital is progressing on-site non-smoking, high smoking rate hospital is considered to be a hospital that is not in progress on site non-smoking. Furthermore, both the paper No 19 and paper No 21 are carried out in Fukuoka. One is carried out in university hospital which indicates low smoking rate, the other one is community hospital. However, the smoking differences between the hospitals is becoming narrow the three studies in 2013 [11, 23, 24]. This indicates that many hospitals may have been started on-site non-smoking. Further researches are required to understand in this regard.

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