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VITAMIN/CALCIUM SUPPLEMENT USE IN TAIWAN: FINDINGS FROM THE 1994 NATIONAL HEALTH INTERVIEW SURVEY

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This study aimed to provide the prevalence of vitamin/calcium supplement use and, to explore the gender differences in and the correlates of supplement use. Data came from the 1994 National Health Interview Survey of 3,814 households; and 7,019 respondents (3,561 females and 3,458 males) aged 25 years old and older were included in the analysis. Supplement users were defined as individuals who reported taking any supplements at least once a week. Associations between supplement use and its correlates were examined by using chi-square analysis and logistic regression. The results indicated that 22.2% of females and 12. 7% of males used vitamin supplement, and 10.2% of females and 3.7% of males took calcium supplement. The adjusted sex odds ratio was 2.8 (95%CI=2.4-3.2) for vitamin supplement use and 3.8 (95%CI=3.0-4.7) for calcium supplement use when sociodemographic and health variables were controlled. Increased likelihood on the use of vitamin/calcium supplement was associated with sociodemographic characteristics (females, over 45 years old, more educated) and health behaviors (more regular exercise and check on blood pressure). Additionally, females who received regular Pap smear or with no chronic disease tended to take more vitamin supplement and females who perceived themselves with a poor health condition were more likely to use calcium supplement than others.

Key words: supplement use, vitamin supplement, calcium supplement, health behavior

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Nutrition supplements have been playing an important role in health promotion and the prevention of chronic diseases recently [1-7]. The focus of study and practice has recently shifted from combating nutrient deficiencies to addressing nutrient needs for good health throughout the life cycle [8]. Although the dietetics professionals have suggested that healthy individuals should be able to obtain adequate nutrients from dietary sources, the use of nutritious supplements has greatly become a common health practice [9]. For example, in the USA, supplement use is the major pharmaceutical form of self-directed health promotional behavior practiced by the general public [10]. Thus, attention to research must also be expanded to include the use of nutritious supplements.

Variations of supplement use could be seen in sociodemographic characteristics, such as sex, age, education, social economic status, geographic region, and so on [10-13]. Also, it is well recognized that supplement use is positively associated with health-related behaviors. The supplement users were more likely to exercise regularly, have more frequent use of health screenings, have better diets from food alone, eat more servings of fruits and vegetables, follow a pattern of low-fat diet, believe in a connection between diet and cancer, and have better health

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consciousness than nonusers [12,14-16]. In Taiwan, although consumers generally consider that supplement use is a health promoting behavior [17], there is relatively little information with regard to the correlation between supplement use and its correlates. This study intended to present the prevalence of vitamin/calcium supplement use in Taiwan, and to account for the factors affecting the use of vitamin/calcium supplement, with an emphasis on gender differences.

MATERIALS AND METHODS

Source of data

The 1994 National Health Interview Survey was conducted by the Institute of Public Health of National Taiwan University under the sponsorship of the Department of Health, Executive Yuan, Republic of China. The objective of the NHIS-1994 was to collect information about health conditions, the utilization of health services, and the health habits of the noninstitutionalized population in Taiwan. The nationwide survey sought to obtain a nationally representative sample of households in Taiwan using the three-stage stratified random sampling method with a probability proportional to size. In the first stage, 58 townships were selected from the 359 townships in Taiwan according to their administrative structure and level of socioeconomic development [18]. In the second stage, 149 tsuns or lis, the basic administrative regions in a rural or urban township, were selected from the selected 58 townships. Finally, 3,814 households were selected from the 149 selected tsuns/lis. Field interviews were carried out by the Provincial Institute of Family Planning from October 1994 to December 1994. All registered members of the selected households, whether regular residents or not, were interviewed. Newborns and all persons who had not registered but had resided for more than 3 months were also included. The response rate of 81.8 percent yielded a total of 3,119 households and 11,925 respondents. The sample's distribution across standard demographic measures is virtually identical to what is found in population survey. Details of this survey have been presented elsewhere [19]. The following analyses were limited to respondents aged 25 years old and older, the restricted sample size was only 7,019 (3,561 women and 3,458 men).

Measures

The questionnaire asked for current uses of vitamin supplement and calcium supplement, as well as their general sociodemographic information, self-reported health status and health behaviors. Supplement use was assessed by questions on frequency: none; less than once a week; once a week; 2-3 times a week; 4-5 times a week; 6-7 times a week. In general, the patterns of supplement use were grouped into three categories: "none" (less than once a week), "irregular" (at least once a week but less than daily), and "regular" (daily) [10,14,20]. Because the regular rates of use were low (see Table 1), we computed the regular and irregular as the definition of supplement users in this paper.

Sociodemographic variables consisted of sex, age, and education. The measurement of self-reported health status consisted of self-perceived health and the number of self-reported chronic diseases, which was reclassified into having at least one chronic disease or none. Health behaviors included exercise, smoking and health screening behaviors (blood pressure check and Pap smear). Due to the low percentage of female smokers, the following female logistic regression was exclusive of the smoking variable.

Analysis

All statistical analyses were performed using the SAS software package. The chi-square test and logistic regression techniques were used to examine the relationships of interests. Because the sample distribution varied in fews of sociodemographic characters and self-reported health status between sexes (see Table 2), the following analyses were done separately for women and men.

First, we calculated the crude prevalence of vitamin/calcium supplement use separately by sex and age groups. Second, the data were stratified, and the relationships within each of the sociodemographic and health characteristics were evaluated. In addition, the sex ratios of prevalence of supplement use further underline the gender differences. Finally, multivariable logistic regression was conducted to use the dummy variable approach for categorical variables to account for odds ratio and in testing the significance of each correlated variable. The regression model helped to clarify the association between supplement use and other correlated variables after adjusting the confounding effect. Adjusted odds ratios and 95% confidence intervals were estimated to describe the association between vitamin/calcium supplements use and its correlates. Moreover, the logistic regression was conducted separately by sex to reveal the gender differences.

Table 1. The frequency of patterns of vitamin/calcium supplement use according sex and age groups, 1994 Taiwan NHIS

		Number of subjects	Using pattern (%)		
		None [b]	Irregular [c]	Regular [d]	
Vitamin					
25-44y	F/M [a]	2070/1945	76.9/89.5	16.8/ 8.2	6.2/2.4
45-64y	F/M	1036/1003	78.4/85.6	13.4/ 9.7	8.2/4.7
⩾ 65y	F/M	455/ 510	79.8/81.9	12.4/10.3	7.9/7.8
Total	F/M	3561/3458	77.7/87.3	15.2/ 8.9	7.0/3.8
Calcium					
25-44y	F/M	2070/1945	90.6/96.8	7.0/2.4	2.4/0.8
45-64y	F/M	1036/1003	87.9/96.1	8.4/2.5	3.8/1.4
⩾ 65y	F/M	455/ 510	90.5/94.3	5.7/3.6	3.7/2.2
Total	F/M	3561/3458	89.8/96.2	7.2/2.6	2.9/1.2

Note: [a] F/M = female/male

[b] none was defined as use less than once a week

[c] irregular use was defined as use at least once a week but less than daily

[d] regular use was defined as use daily

RESULTS

Prevalence and gender differences

Table 1 shows the prevalence of supplements use among sex-age groups. The overall prevalent rates among women were 22.2% for the use of vitamin supplement (7.0% regular and 15.2% irregular), and 10.2% for calcium supplement use (2.9% regular and 7.2% irregular). The rate on vitamin supplement use of males was 12.7% (about half of the female rate), and only 3.8% used it regularly. The use of calcium supplement among men was much lower, overall it was 3.7%, and the regular use was 1.2%.

The sex specific prevalence of both supplements was strikingly different across age groups. The overall sex ratios were 1.8 for vitamin supplement use and 2.7 for calcium supplement use (Table 2). Women were more likely than men to use vitamin and calcium supplements among all age subgroups, but there appeared to be no significant gender differences in vitamin supplement use among the group aged 65 and older. The gender differences in vitamin use, decreased with the increase in age, were particularly large, over twice among individuals aged between 25 to 44 years old. The sex ratio of calcium supplement use was approximately three among those under 65 years of age, sharply declining to 1.7 among those aged older than 65.

Furthermore, we used logistic regression to estimate the adjusted sex odds ratios. Variables adjusted for the logistic regression model included age, education, perceived heath, chronic disease, exercise, and blood pressure checkups. Adjustment slightly elevated the sex ratios. The sex ratios of female to male were 2.8 (95% CI=2.4-3.2) for vitamin supplement use and 3.8 (95% CI=3.0-4.7) for calcium supplement use (Table 3 and Table 4).

Correlation with sociodemographic characters

In analyses stratified by age, almost all of age differences were statistically significant except for vitamin supplement use among women; however, the relationships were not consistent. The prevalence among men rose with increasing age, ranging from 10.5% to 18.0% for vitamin, and from 3.2% to 5.7% for calcium (Table 2). After controlling for other sociodemographic and heath variables, the odds ratios of vitamin/calcium supplement uses among men rose with increasing age (Table 3).

Middle-aged women had the highest prevalence of calcium supplement use (12.2%) followed by the young (9.4%) and old women (9.5%). Nonetheless, significant age differences were not found in the

Table 2. The sex specific prevalence and sex ratios of vitamin/calcium supplement use according to sociodemographic characteristics, health status and health behaviors, 1994 Taiwan NHIS

	Number of subjects			Percentage of users (%)							
				Vitamin				Calcium			
	F[a]	M[b]	χ^2	F[a]	M[b]	F/M[c]	χ^2	F[a]	M[b]	F/M[c]	χ^2
	3561	3458		22.2	12.7	1.8		10.2	3.8	2.7	
Age											
25-44y	2070	1945	*	23.1	10.5	2.2	***	9.4	3.2	2.9	***
45-64y	1036	1003		21.5	14.5	1.5	***	12.2	4.0	3.1	***
⩾ 65y	455	510		20.2	18.0	1.1	NS	9.5	5.7	1.7	*
Educated years											
0-6	1761	1199	***	14.1	7.4	1.9	***	7.0	2.3	3.0	***
7-9	485	612		23.1	8.7	2.7	***	12.8	3.3	3.9	***
10-12	827	904		29.0	12.9	2.3	***	12.5	3.8	3.3	***
⩾ 13	484	741		40.1	24.6	1.6	***	15.5	6.8	2.3	***
Perceived health											
good	1582	1900	***	24.2	13.7	1.8	***	9.7	4.1	2.4	***
fair	1424	1186		21.4	12.2	1.8	***	10.3	3.6	2.9	***
poor	555	372		19.3	9.7	2.0	***	11.4	3.0	3.8	***
Chronic disease											
yes	2850	2278	***	21.4	12.1	1.8	***	9.7	3.6	2.7	***
no	711	1180		25.9	14.0	1.9	***	12.1	4.3	2.8	***
Exercise											
< 1 per week	2108	1929	**	17.4	8.6	2.0	***	7.8	2.8	2.8	***
⩾ 1 per week	1272	1349		30.2	19.4	1.6	***	13.9	5.3	2.6	***
BP check											
no	1163	1279	***	17.6	8.4	2.1	***	7.1	2.7	2.6	***
yes	2398	2179		24.6	15.3	1.6	***	11.7	4.5	2.6	***
Pap smear											
irregular	3165	-		20.5	-	-		9.6	-	-	
regular	396	-		36.6	-	-		15.2	-	-	
Smoking											
never or quit	3406	1517	***	22.6	16.4	1.4	***	10.3	5.2	2.0	***
often or sometimes	155	1940		15.5	10.0	1.6	*	8.4	2.7	3.1	***

Note: [a] female, [b] male, [c] female/male

* P<0.05, ** P<0.01, *** P<0.001, NS non significant

prevalence of vitamin supplement use among women (ranging from 20.2% to 23.1%) (Table 2). After adjustment for other correlated variables, women aged 25-44 years old were the least likely to use vitamin/calcium supplement (Table 3, Table 4). However, the odds ratios of respondents aged 45-64 years old and more than 65 years old were similar. That is, no difference in vitamin/calcium supplements use among women aged older than 45 years old was found.

When stratified by education, use of vitamin

Table 3. Adjusted odds ratios of the prevalence of vitamin supplement use, 1994 Taiwan NHIS

	Total	Female	Male
	OR(95% CI)	OR(95% CI)	OR(95% CI)
Sex			
male	1.0		
female	2.8(2.4-3.2)***		
Age			
25-44	1.0	1.0	1.0
45-64	2.0(1.7-2.4)***	1.9(1.5-2.4)***	2.2(1.6-2.8)***
⩾ 65	2.4(1.9-3.0)***	2.0(1.4-2.8)***	3.1(2.2-4.3)***
Educated years			
0-6	1.0	1.0	1.0
7-9	2.4(1.9-3.1)***	2.6(2.0-3.6)***	1.8(1.2-2.6)**
10-12	3.8(3.1-4.7)***	3.9(2.9-5.1)***	3.0(2.2-4.2)***
⩾ 13	6.4(5.2-8.0)***	6.0(4.4-8.0)***	5.6(4.0-7.8)***
Perceived health			
good	1.0	1.0	1.0
fair	0.9(0.7-1.1)	1.0(0.8-1.2)	0.9(0.7-1.1)
poor	0.9(0.8-1.1)	1.0(0.7-1.3)	0.7(0.4-1.0)
Chronic disease			
no	1.0	1.0	1.0
yes	0.9(0.7-1.0)*	0.8(0.7-1.0)*	0.9(0.7-1.1)
Exercise			
< 1 per week	1.0	1.0	1.0
⩾ 1 per week	1.7(1.5-2.0)***	1.7(1.4-2.0)***	1.6(1.3-2.0)***
BP check			
no	1.0	1.0	1.0
yes	1.5(1.3-1.8)***	1.5(1.2-1.8)***	1.5(1.1-1.9)**
Pap smear			
irregular		1.0	
regular		1.6(1.3-2.1)***	
Smoking			
no			1.0
yes			0.9(0.7-1.1)

Note: * P<0.05, ** P<0.01, *** P<0.001

supplement was found to increase with educational attainment and was lowest in those with fewer than 6 years of education (14.1% for women and 7.4% for men). Prevalence of vitamin supplement use rose further with 7 through 9 years and 10 through 12 years of education. The highest rates of vitamin supplement use were found among those with 13 or more years of education (40.1% for women and 24.6% for men) (p<0.001). However, the calcium supplement did not demonstrate the expected strong posi-

Table 4. Adjusted odds ratios of prevalence of calcium supplement use, 1994 Taiwan NHIS

	Total	Female	Male
	OR(95% CI)	OR(95% CI)	OR(95% CI)
Sex			
male	1.0		
female	3.8(3.0-4.7)***		
Age			
25-44	1.0	1.0	1.0
45-64	2.1(1.6-2.7)***	2.2(1.6-3.0)***	1.6(1.0-2.6)*
⩾ 65	2.2(1.5-3.0)***	1.9(1.2-3.0)**	2.7(1.6-4.8)***
Educated years			
0-6	1.0	1.0	1.0
7-9	2.9(2.1-4.0)***	3.3(2.3-4.9)***	1.9(1.0-3.6)*
10-12	3.2(2.4-4.3)***	3.4(2.4-4.9)***	2.4(1.3-4.2)**
⩾ 13	4.4(3.2-6.0)***	4.3(2.9-6.3)***	3.7(2.1-6.6)***
Perceived health			
good	1.0	1.0	1.0
fair	1.2(0.8-1.6)	1.2(0.9-1.5)	0.9(0.6-1.3)
poor	1.1(0.9-1.3)	1.4(1.0-2.1)*	0.6(0.3-1.3)
Chronic disease			
no	1.0	1.0	1.0
yes	0.8(0.7-1.0)	0.8(0.6-1.1)	0.9(0.6-1.2)
Exercise			
< 1 per week	1.0	1.0	1.0
⩾ 1 per week	1.5(1.3-1.9)***	1.6(1.3-2.0)***	1.3(0.9-1.9)
BP check			
no	1.0	1.0	1.0
yes	1.5(1.2-1.9)**	1.5(1.1-2.0)**	1.3(0.8-1.9)
Pap smear			
irregular		1.0	
regular		1.2(0.9-1.7)	
Smoking			
no			1.0
yes			0.7(0.5-1.0)

Note: * P<0.05, ** P<0.01, *** P<0.001

tive gradient of using rate by educational level. Instead, rates were similar among women in each category of education except for those with fewer than 6 years, the rates of whom were markedly lower (p<0.001). Men educated for more than 13 years had a higher rate of calcium supplement use, while those with fewer than 12 years of education shared similar lower rates (p<0.001) (Table 2).

After statistically adjustment for other correlates, we observed a clear dose gradient relationship between educational years and supplement use (female vitamin and male vitamin/calcium). The

odds ratios, increasing with rising educational levels, for the most compared with the least educated groups were 6.0 (95% CI=4.4-8.0), 5.6 (95% CI=4.0-7.8), and 3.7 (95% CI=2.1-6.6) for female vitamin use, male vitamin use, and male calcium use, respectively (Table 3, Table 4).

Correlation with health variables

There was no consistent evidence that those who perceived their health as excellent were more likely to use nutritious supplements than those with a poorer perceived health. Only a significant bivariate relationship was found among female vitamin supplement use. Women who reported their health as good and no chronic disease used slightly more vitamin supplement than the reference group ($p<0.05$) (Table 2). After adjustment, however, we got a reversed correlation. Women who perceived their health as poor were more likely to use calcium supplement than those who perceived themselves with a good health (OR=1.4, 95%CI=1.0-2.1, $p<0.05$) (Table 4). On the other hand, women who have had one or more chronic diseases were slightly less likely to use vitamin supplement (OR=0.8, 95%CI=0.7-1.0, $p<0.05$) (Table 3). In contrast to women, we found no evidence of an association between vitamin/calcium supplement uses and health status among men.

The users of both supplements were more likely to practice other health-related behaviors than nonusers (Table 2). The associations with health behaviors were unchanged after controlling the effects of other correlates. Women who exercised and checked blood pressure regularly were more likely to use vitamin/calcium supplements (OR=1.5~1.7, $p<0.01$). Pap smear was also significantly correlated with vitamin supplement users (OR=1.6, 95%CI=1.3-2.1, $p<0.001$). Compared to women, the relationships between vitamin supplement use and health behaviors were similar among men. Men with regular exercise and blood pressure checkups were more likely to use vitamin supplement (OR=1.5~1.6, $p<0.01$). Although the male smokers had a significantly lower prevalence on the use of vitamin/calcium supplements, the odds ratios were not statistically significant.

In summary, the use of vitamin and calcium supplements was more popular among females, old people, and more highly educated individuals. Besides the male calcium supplement users, people with more positive health behaviors such as regular exercise and blood pressure checkups were more likely to use vitamin/calcium supplements. Female vitamin supplement users were additionally correlated with regular Pap smear and having no chronic disease. Moreover, women with a poor perceived health used more calcium supplement than those who perceived their health as good.

DISCUSSION

This paper provides a nationalized reference for the prevalence on the use of vitamin and calcium supplements and shows the effects of sociodemographic characters and heath status. The Third Nutrition and Health Survey in Taiwan (NAHSIT) carried out from 1993-1995 had just begun to include the items of supplement use. However, the measurement did not clarify the frequency of using behavior, and we only got a rough rate of calcium supplement use, which was 9.6% for women and 6.0% for men among participants aged older than 19 years old. Moreover, the total rate of a variety of nutritious supplements (including vitamins, mineral, Chinese herbs, and healthy food) was 30.8% for women and 20.9% for men [20]. Nevertheless, this report did not stratify the groups of gender and age and distinguish the vitamins from several kinds of supplements. Based on these reasons, it was not appropriate to compare the results of NHIS with NAHSIT unless the data of NAHSIT was analyzed further.

Compared with the studies in the USA [14,21, 22], the prevalent rates of vitamin/calcium supplement use were lower in Taiwan. With respect to calcium supplement, the data did not show a high use rate among menopausal women (older than 45 years old). It was well recognized that the osteoporosis was not a popular issue until 1995. After that, a great volume of papers about osteoporosis were published in Taiwanese journals. In the meantime, the establishment of the Society of Menopause in Taiwan aroused lay persons' awareness of menopause. However, the overall rate of 10.2% for calcium supplement use among women aged 25 and older was similar to the result of NAHSIT (9.6%) [20].

The present data indicate that the use of vitamin/calcium supplements was more prevalent among women than men in each of the three age groups: 25-44 years old, 45-64 years old, and 65 years old and older. Almost all of other papers also show the same results that women use nutritious supplements more frequently than men do, regardless of the adjustment for demographic factors [10-14,23]. In addition to calcium supplement, which has specific benefits on women for preventing osteoporosis, women

still tend to use more general vitamins than men do. What reasons make women use more supplements, health belief, health status, or health-related behaviors?

Our findings, as other studies have suggested [12,15,24], indicate that a number of behaviors are strongly correlated with supplement use, such as regular exercise, blood pressure checking and Pap smear, especially for women. People with health behaviors reflect their higher health conscious and healthy lifestyle. Read et al. supported that health concerns/beliefs may stimulate individuals to use supplements [25].

On the other hand, female users of calcium supplement actually rate their personal health as poorer than the nonusers do. By contrast, women without any chronic disease use more vitamins than those with one or more chronic disease, although the correlation is weak (OR=0.8, 95% CI=0.7-1.0). The study conducted by Bender et al. also indicated similar results that supplement use was more possible and more intense among individuals with one or more chronic health problems, but also among individuals who perceived their health as very good or excellent [9]. There are several possible explanations for the present contrary results.

One possibility is that the intake of nutritious supplements is considered to have the functions of curing disease, being less susceptible to colds, oral ulcer, heart attacks, skin problems, etc. [2,6,17,25, 26]. Another explanation is that people believed supplement use increased their energy and immunity [17,26-28]. Finally, those individuals perceiving their health as excellent have no motivation to improve their health situations; consequently, they do not believe that supplement use will be beneficial [29,30].

In the present study, the users' belief toward vitamin and calcium supplement (curative, preventive, or promoting health) and the motivation of using supplements (recommended by medical professionals or not) might be different. However, the questionnaire of NHIS did not include the reasons for why supplements were used (especially from prescription or not), which limited the reasoning of causal relationship. Based on the results of two studies conducted in the central part of Taiwan and college students in Taipei, around 20% of users took supplements according to doctor's prescription or in case of feeling ill. Moreover, the majority took supplements by themselves [17,31].

However, we can not as certain the effects of health status on men's behaviors. The rates of supplement use increased with the increase in age among men, but had no differences between middle-aged and old women. Previous research did not explore what kind of mechanism induced this gender difference. Further research is needed to explore this phenomenon.

Due to the economic development in Taiwan, the use of nutritious supplement has become a common health practice that is rooted in the popular beliefs about health and wellbeing [17,26]. Supplement use was verified to be highly correlated with socioeconomic status in several studies [10-13] and the correlation is also found in this paper. The prevalence of supplement use in our study had a strong and positive association with education. This relationship occurs through the education hierarchy; furthermore, it is particularly pronounced in vitamin use. With the rise on education levels, respondents intended to use more vitamin and calcium supplements. Well-educated people can obtain more information about nutritious supplements from various resources, and have a better economic ability to purchase supplements [29]. It is notable that the two main sources of gaining nutritious supplements in Taiwan are traveling abroad and hyper sale, both of which are correlated with socioeconomic conditions. It is a common phenomenon that when the Taiwanese people travel abroad many of them are asked by their relatives to bring vitamins or other nutritious supplements as gifts from countries such as the USA and Japan. Hyper sale is another source, but the products are not cheap and not everyone can afford to buy them.

In the present study, the results from binary analyses showed that women who perceived better health and had no chronic disease had significantly higher using rates of vitamin supplement. The crude prevalence of vitamin use stratified by age groups was similar; even the younger females had a little higher using rate than the middle-aged and the old groups. However, after adjusting sociodemographic and health variables, we obtain a contrary result that the likelihood of using vitamin supplement among women increased with age and the correlation with self-perceived health status was unclear and inconsistent. This phenomenon may be explained in part by the cohort effect that the older people are less educated, lower SES, more chronic disease, and perceived poor health than the young could. That is why the direction of association was changed after controlling other confounding variables.

In conclusion, the results of the present study

indicated that a greater number of supplements were used by women, older individuals, and the better educated. Moreover, we have tried to explore the kind of mechanism which induces gender differences. We suggest that the prevalence of supplement use cannot simply be profiled by its correlates, but needs to be adjusted. It is notable that little data is presented on the long-term health consequences of nutritious supplements and that judgments must be reserved with respect to whether the overall effects are beneficial, harmful or of no health consequences. In Taiwan, it will be important to conduct follow-up studies that examine the health effects on nutritious supplements, monitor the trends of prevalence and using patterns, contents, dosage and explore the reasons for supplement use in advance. On the other hand, the future researches can focus on the linkage of consumer culture and nutritious supplement use. Consumer culture is the culture of a market society. Consumers' access to consumption is largely structured by the distribution of material and culture resources, which is in a capitalist way. The supplement use is strongly correlated with the socioeconomic status of individuals. Is the nutritious supplement use a capital behavior in the name of health promotion? Does it really belong to one kind of promoting or preventing health behavior? Thus needs to be an alternative approach to explore this issue.

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維他命/鈣片營養補充劑的使用及其相關因素探討：1994年國民醫療保健調查

張菊惠　江東亮

本研究目的爲瞭解台灣地區成人使用維他命與鈣片營養補充劑的盛行率，探討使用率的性別差異，以及影響補充劑使用的相關因素爲何。資料來源爲八十三年國民醫療保健調查，採分層三段等機率抽樣之家戶訪視調查，調查期間爲八十三年十月至十二月，共完訪3,119戶，完訪率爲81.8%，接受調查樣本計11,925名。本研究選取25歲以上之成人爲分析對象，共計有7,019人（女3,561人，男3,458人）。營養補充劑的使用定義依其頻率區分爲規律（每天使用）、不規律（一週使用一次以上）、無（一週使用一次以下）。但因規律使用的比率很低，因此在雙變項分析與Logistic迴歸分析時，將不規律與規律使用兩組合併爲有使用者。探討之相關因素有社會人口學因素（性別、年齡、教育程度）、健康狀態（自評健康、有無慢性病），以及健康行爲（運動、定期量血壓、抽菸，女性尚有子宮頸抹片）。結果發現22.2%的女性與12.7%的男性每週至少使用一次維他命（每天規律使用的女性有7.0%，男性有3.8%），10.2%的女性與3.8%的男性使用鈣片（每天規律使用的女性只有2.9%，男性爲1.2%）。以迴歸控制社會人口學與健康因素後獲得之性別比值，女性使用維他命是男性的2.8倍（95% CI=2.4-3.2），鈣片爲3.8倍（95% CI=3.0-4.7）。在年齡層的差異方面，青年階段兩性的維他命與鈣片使用率皆遠低於老年階段，中年期只有男性的維他命使用顯著低於老年期，中年女性與老年女性的維他命與鈣片使用並無差異。無論是男性或女性，維他命與鈣片的使用率皆隨教育程度的增高而有顯著增加的趨勢。無慢性病的女性有顯著偏高的維他命使用率，但自覺健康差的女性卻有較高的鈣片使用率。具有規律運動與定期量血壓習慣的女性有較高的維他命與鈣片使用率，男性亦有較高的維他命使用率。此外，定期子宮頸抹片檢查的女性亦有較高之維他命使用率，抽菸與否則與男性的維他命和鈣片使用無關。根據本研究之發現，本文進一步討論使用維他命與鈣片的性別差異，與社經程度對營養補充劑使用的影響外，並剖析健康狀態與使用營養補充劑之間的關聯性。

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