

私立大学の教職員における健康管理および特定保健指導への要望状況に対する意識調査

Attitude survey of health management and application status for specific health guidance among faculty and staff members at a private university

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キーワード：特定健康診査，生活習慣変容，保健指導，アンケート

Key words : Specific health checkups, lifestyle modification, health counseling, questionnaire

抄録

目的はまず特定健診受診者の健康状態と前回の特定健康診査結果への意識についての情報を収集することである。さらに保健指導について何を希望するか、拒否する理由、特に要望する内容を調査した。対象者は私立大学の教職員で男性432名、女性407名であった。特定健康診査結果の転記およびアンケート調査を行った。40歳以上の男性は、40歳未満の男性や女性全体より健康と感じ、かつ健診結果良好である割合が低かった。保健指導については検査結果および体重コントロールについての説明と指導を希望していた。40歳以上では健康情報への要望は減少した。しかし、体重管理は職域における効果的な指導とともに男女や年齢に関わらず、高い需要があった。保健指導を希望しない主な理由は、自主的に健康増進するためであった。一方、家族の支援や友人の協力などへの要望もあるため、これらが十分に得られれば、生活習慣の改善が一層しやすくなると考えられた。

Abstract

The purpose of this study is to collect information on individual awareness of health condition and results of prior specific health checkups (SHC) and to examine specific health guidance

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(SHG) in terms of what applicants hope for, why some accept and some decline SHG, and specific needs of applicants. Subjects included 432 men and 407 women faculty or staff members at a private university in Japan. We analyzed the results from questionnaires about participant health condition and previous SHC results, willingness to receive SHG, needs when applying for SHG, reasons why non-applicants declined SHG, and the demands for health management and healthy lifestyle promotion. The percentage of men ≥ 40 years old who were deemed 'well' and who considered their SHC results to be 'good' was significantly lower than that of men < 40 as well as that for women ≥ 40 years old. Subjects required explanations and guidance regarding their own clinical data and weight control for counseling. Older subjects were found to demand less health information, while weight management as well as effective guidance at the workplace were found to be highly necessary across both gender and age groups. The main reason some subjects declined SHG was that they felt confident in their own health promotion efforts with the medical and health information they had. We did find that lifestyle improvements were more readily made when supportive resources were utilized in full, as many subjects required high levels of family support, friendly cooperation and encouragement from the workplace.

I. Introduction

The Ministry of Health, Labor and Welfare in Japan initiated the practice of Specific Health Checkups (SHC) and Specific Health Guidance (SHG) in 2008 in order to combat the growth in medical spending by decreasing lifestyle diseases (Ministry of Health, Labor and Welfare, 2007). However, serious financial distress was caused by a deficit balance of various insurance types, especially for municipal national health insurance (MNH) (Asahi Shimbun, 2014). One of the main reasons for this is thought to be the fact that only minor increases were achieved in the SHG implementation rate (IR) across six years (Ministry of Health, Labor and Welfare, 2011). The IR for SHG indicates the percentage of participants who received guidance among those who received SHCs. SHCs are obligatory to all Japanese citizens ≥ 40 and < 75 years old. They are also recommended for those < 40 years old, as more lifestyle diseases have begun to emerge in individuals who have not yet reached middle age. From a practical stance, SHG is provided only to those who apply for it. Yes/

no answers pertaining to SHG were collected from the questionnaire that forms part of the "Standard Program of SHCs and SHG" initiated by the Ministry of Health, Labor and Welfare (Ministry of Health, Labor and Welfare, 2007). However, none of the sections in the questionnaire pertain to the applicant needs or reasons why some individuals do not apply. In order to increase the IR for SHG, further information is required, and should be evaluated according to whether an individual applied for SHG or not. Thus, the present study objective was to survey the needs, demands, and reasons embodied by SHG applicants and non-applicants, and tabulate these data alongside those for health condition and subjective assessment of SHC results.

II. Participants and methods

1. Participants

Subjects were regular faculty or staff members whose jobs involved primarily sedentary work at a private university in Japan. Each had undergone

a SHC implemented by private mutual aid insurance in October 2012, except for those who received a comprehensive medical examination. Study participants included 432 men (mean age, 45.3±13.0 years) and 407 women (mean age, 42.5±10.9 years).

2. Questionnaires about health condition and previous SHC results

Yes/no answers from the questionnaire are displayed in Table 1. Participants with health conditions classified as 'well' or 'not well' were next divided into two groups according to their assessment of their previous SHC results ('good' or 'not good'). Percentages of individuals in each group were compared according to gender and age groups. 'Good' results were those with no abnormal findings or results outside of the 'normal' range for any items included in the checkup.

3. Questionnaires regarding participant willingness to receive health counseling

Yes-no answers are displayed in Table 2. We collected the number of requests for health counseling made through the standard questionnaires which comprise part of the "Standard program of SHC and SHG" initiated by the Ministry of Health, Labor and Welfare (Ministry of Health, Labor and Welfare, 2007).

4. Questionnaire on applicant needs with regard to health counseling

For those who accepted the health counseling, participants were asked to select from five options to describe their needs with regard to this service (Table 2). Multiple selections could be made, and the percentages of participants that selected each option were compared across gender and age groups.

5. Questionnaire regarding non-applicants declining health counseling

For those who declined the health counseling, participants were asked to select from five options to describe why they chose to decline health counseling (Table 2). Multiple selections could be made, and the percentages of participants that selected each option were compared across gender and age groups.

6. Questionnaire regarding participant requests with regard to their health management and promotion of healthy lifestyle

Participants were asked to select from among six options to describe their requests with regard to services to help with their own health management and promotion of a healthy lifestyle (Figure 1). Multiple selections were possible, and the percentages of participants that selected each

Table 1. Participant distributions according to health condition and subjective assessment of previous specific health checkup (SHC) results. Participants were employees of a private university in 2012.

Health condition		Well		Not well		Other
		Good	Not good	Good	Not good	
assessment of SHC results						
Men, age group (n)	<40 (156)	87.2% (136)	5.1% (8)	6.4% (10)	0.6% (1)	0.6% (1)
	≥40 (276)	69.6% (192)**	4.0% (11)	21.0% (58)	4.0% (11)	1.4% (4)
Women, age group (n)	<40 (149)	83.9% (125)	5.4% (8)	4.7% (7)	0% (0)	6.0% (9)
	≥40(258)	77.1% (199)††	9.3% (24)	7.8% (20)	1.2% (3)	4.7% (12)

Yes/no answers were as follows:

How would you describe your current health condition? ('well' or 'not well')

Describe your previous SHC results ('good' or 'not good').

**p < 0.01 between age groups in men, ††p < 0.01 between genders ≥40 (Pearson's χ^2 test).

option were compared across gender and age groups.

7. Statistical analysis

Pearson's χ^2 test was used for categorical variables which were sorted according to gender and age (<40 or \geq 40 years old). Statistical analysis was performed using SPSS[®] 12.0 J software (SPSS Inc., Chicago, IL), with the statistical significance set at $p < 0.05$.

8. Ethical considerations

This study was approved by the Ethics Committee of the Osaka Medical College (No. 679). Written and oral explanations were provided, and informed consent was obtained from each participant. Anonymity was ensured to protect personal information.

III. Results

Table 1 shows the percentages of participants in each health condition and subjective assessment of previous SHC results category. Over 80% of participants of both genders <40 years old were

classified with a health condition of 'well' and 'good'. For those \geq 40 years old, this held true for 70% of men and 77% of women. The percentage of men \geq 40 years old who were deemed 'well' and who had 'good' results was significantly lower than that of men <40 as well as that for women \geq 40 years old. The percentage of men \geq 40 years old who were 'not well' but had 'good' results was 21%.

Table 3 shows the percentages of applicants with the various health counseling needs. Percentage of applicants \geq 40 years old had selected significantly fewer needs than did those who were <40 years old in both genders. The option, 'An explanation of the results that is easily understood and implemented', had been selected by the highest percentage of individuals, regardless of gender or age group. Among men, those \geq 40 years old were significantly fewer in number, relative to those <40 years old. The second most popular option was 'Guidance on how to address obesity and/or excess waist circumference' across both genders and age groups.

Table 4 shows the percentages of reasons selected

Table 2. Yes/No answers regarding health counseling in the standard questionnaire distributed as part of the Specific Health Checkup implemented by the Ministry of Health, Labor and Welfare. Multiple choices are listed for those who accepted Specific Health Guidance ('Yes') or declined it ('No') for the purposes of the present study.

To those who chose 'Yes':

1. Would you be willing to receive health counseling about lifestyle modifications if the opportunity were available?
2. What specific needs do you have? (choose from the options below)
 - a. An explanation of the results that is easily understood and implemented
 - b. Counseling to address physical decline
 - c. Counseling for mental stress and/or health concerns
 - d. Guidance on how to modify unhealthy lifestyles
 - e. Guidance on how to address obesity and/or waist circumference

To those who chose 'No':

- Why did you choose to decline health counseling? (choose from the options below)
- a. Health counseling is ineffective and unnecessary for me.
 - b. It may be effective for me, but I am too busy with work.
 - c. I have no interest in the SHC results or am not anxious about my health.
 - d. I am self-motivated and do not require assistance.
 - e. I do not plan to make any lifestyle modifications.

Table 3. Services requested by health counseling applicants who were employees of a private university in 2012.

	Age group (n)	Percentages of applicants (proportions)	Percentage of participants (n) who selected each option				
			1	2	3	4	5
Men	<40 (89)	57.1% (89/156)	49.4% (44)	0% (0)	1.1% (1)	11.2% (10)	21.3% (19)
	≥40 (129)	46.7% (129/276)*	29.5% (38)*	10.1% (13)	10.9% (14)	5.4% (7)	20.2% (26)
Women	<40 (93)	62.4% (93/149)	51.6% (48)	2.2% (2)	2.2% (2)	14.0% (13)	16.1% (15)
	≥40 (131)	50.8% (131/258)*	46.6% (61)	9.2% (12)	3.1% (4)	8.4% (11)	19.8% (26)

1) An explanation of the results that is easily understood and implemented

2) Counseling to address physical decline

3) Counseling for mental stress and/or health concerns

4) Guidance on how to modify unhealthy lifestyles

5) Guidance on how to address obesity and/or excess waist circumference

*p < 0.05 between age groups (Pearson's χ^2 test)

Table 4. Reasons selected by non-applicants to explain why they declined health counseling. All subjects were employees at a private university in 2012.

	Age group (n)	Percentage of non-applicants (proportion)	Percentage (n) of participants who selected each option				
			1	2	3	4	5
Men	<40 (67)	42.9% (67/156)	0% (0)	3.0% (2)	11.9% (8)	29.9% (20)	9.0% (6)
	≥40 (147)	53.3% (147/276)*	0% (0)	6.1% (9)	5.4% (8)#	34.7% (51)	5.4% (8)
Women	<40 (56)	37.6% (56/149)	0% (0)	1.9% (1)	24.1% (13)†	37.0% (20)	7.4% (4)
	≥40 (127)	49.2% (127/258)*	0.8% (1)	5.7% (7)	9.8% (12)*	35.0% (43)	4.1% (5)

1) Health counseling is ineffective and unnecessary for me.

2) It may be effective for me but I am too busy with work.

3) I have no interest in the SHC results or am not anxious about my health.

4) I am self-motivated and do not require any assistance.

5) I do not plan to make any lifestyle modifications.

#p < 0.1, *p < 0.05 between age groups, †p < 0.1 between genders ≥40 (Pearson's χ^2 test)

by non-applicants to explain why they declined the SHG. The most popular reason was 'I am self-motivated and do not require any assistance' regardless of gender or age group. The percentage that selected 'I have no interest in the SHC results and am not anxious about my health condition' had the second highest percentage of participants across both genders and age groups. The participant group ≥40 years old represented a significantly lower percentage relative to that represented by those <40 years old across both genders. Men <40 years old were significantly fewer in number compared to women <40 years old. The percentage of those who selected 'It may be effective for me but I am too

busy with work' was below 7% in both genders and age groups.

Figure 1 shows participant requests for services to aid in health management and promotion of healthy lifestyles. 'Sympathetic workplace policy to promote employee health' was selected by the highest number of participants regardless of gender and age group. 'Support from family and friends with regard to dietary assistance and physical activity outside the workplace' was the second most popular request across both genders and age groups. Significantly fewer participants ≥40 years old selected 'Health information seminars which are readily available and that would aid in participant

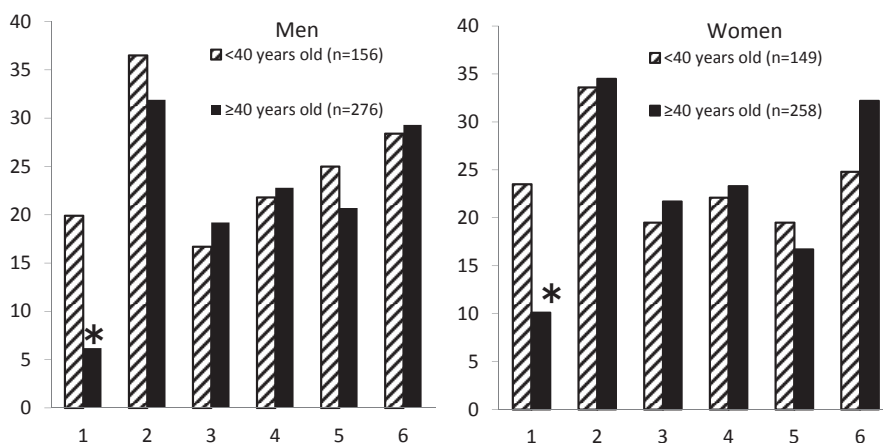


Figure 1. Distribution of participant requests regarding services to assist them in their health management and promotion of healthy lifestyles. Participants were employees of a private university in 2012.

- 1) readily available health information seminars to improve participant understanding of health concerns
 - 2) sympathetic workplace policy to promote employee health (e.g., overwork prevention, encouragement of paid vacation time)
 - 3) peer support/mutual encouragement for promotion of healthy lifestyles at the workplace
 - 4) periodic measurement of physical parameters (e.g., weight, waist circumference and body composition)
 - 5) face-to-face counseling with health professionals who would consider each individual's situation
 - 6) support from family and friends with regard to dietary assistance and physical activity outside of the workplace
- *p < 0.05 between age groups.

understanding of health concerns' compared to those <40 years old in both genders.

IV. Discussion

Participants classified as both 'well' and as having 'good' SHC results comprised more than 80% and 70% in the <40 and ≥40 years age groups, respectively, across both genders (Table 1). According to the NHK Broadcasting Culture Research Institute, more than 80% of Japanese individuals <40 years old and roughly 70% of those ≥40 and <70 years old were aware of their healthy physical status in 2009 (Yamada and Sakai, 2009). The NHK study reported that only 64% of Japanese individuals maintained both physical and mental health. As such, the results of the present study seem to be fairly consistent with results from other

studies conducted among Japanese individuals. Given the lower percentage of men ≥40 years old compared to women of the same age group, we wonder if men have increasingly numerous health concerns as they age, relative to those of women. Among men ≥40 years old in the present study, 21% were classified as 'not well' but having 'good' SHC results (Table 1). These subjects may have had physical, but not mental health.

Across both genders, significantly fewer health counseling applicants were ≥40 years old relative to those <40 (Table 3). Older employees might be more likely than their younger counterparts to cite family commitments as a barrier for their own health management (Blackford et al., 2013).

The most popular request for services to aid in applicant health promotion was 'An explanation

Table 5. Questionnaire about demands for health management and promotion of healthy lifestyle

Please select any and all of the following items which you believe would help you modify your unhealthy lifestyle if they were available.

1. readily available health information seminars to improve participant understanding of health concerns
2. a sympathetic workplace policy to promote employee health (e.g., overwork prevention, encouragement of paid vacation time)
3. peer support/mutual encouragement to promote healthy lifestyles at the workplace
4. periodic measurement of physical parameters (e.g., weight, waist circumference, and body composition)
5. Face-to-face counseling with health professionals who would consider each individual's situation
6. support from family and friends with regard to dietary assistance and physical activity outside the workplace

of the results that is easily understood and implemented', and had the highest percentage of applicants of both genders and age groups (Table 3). In a previous study from 2010, conducted among the same study population, we found that health-conscious individuals are likely to request health counseling even if they do not have metabolic syndrome (Dote et al., 2013a). We surmised that their health conditions may have been affected by their primarily sedentary jobs (Ministry of Health, Labor and Welfare, 2012). However, the present study had significantly fewer male participants ≥ 40 years old than those < 40 years old. The NHK Institute reported that 88% of Japanese individuals trusted medical information they received from their physicians (Yamada and Sakai, 2009). Some participants ≥ 40 years old might be more likely to consult their doctors rather than accept specific health guidance.

The second most popular service requested by health consulting applicants was 'Guidance on how to address obesity and/or excess waist circumference' (Table 3). In a previous study, we found that more than 30% of men < 40 years old had BMI values > 25 and waist circumferences > 85 cm, while more than 30% of men ≥ 40 years old had BMI values > 25 . More than 50% of men ≥ 40 years old reportedly had a waist circumference of > 85 cm

in 2011 (Dote et al., 2013b). Others have reported that 35% of men and 44% of women considered themselves as obese. Of these, 94% planned to lose weight (Yamada and Sakai, 2009).

Furthermore, a 2009 study of 4,912 adults (30-39 years old) in Kobe City (Hyogo Prefecture) found that even healthy young adults were often still anxious about their health and were willing to receive health guidance, given the pandemic metabolic syndrome (Soga et al., 2013). Therefore, effective guidance and measures to promote weight control are highly necessary at the workplace, regardless of employee gender and age. The workplace should be a fruitful setting for public health promotion due to the already established natural social networks, the possibility for implementation at a large-scale, and given the amount of time employees spend at work (Rongen et al., 2013).

The most commonly selected reason to explain why non-applicants ≥ 40 years old declined the SHG was 'I am self-motivated and require no assistance' (Table 4). Participants may feel confident in their own methods of health promotion utilizing the medical and health information available to them. Yamada and Sakai (2009) reported that Japanese individuals tend to be more health-conscious when given more freedom in life. Thus, the present study

population's statuses as regular faculty or staff members whose jobs involved primarily sedentary work may be critical for understanding the low percentage with job stress and high percentage with self-motivation.

Roughly 6% of participants ≥ 40 years old in both genders selected 'It may be effective for me but I am too busy with work' (Table 4). Likely barriers preventing health counseling and lifestyle improvement include job pressure and/or fatigue (Fukumoto et al., 2011; Blackford et al., 2013).

The second most commonly selected reason by non-applicants of either gender and any age group was 'I have no interest in the SHC results or am not anxious about my health condition' (Table 4). Significantly fewer participants were ≥ 40 years old versus < 40 years old in both genders. In addition, significantly fewer participants < 40 years old were women. A public opinion survey conducted by the Department of the Japanese Cabinet Office Minister's Secretariat (JCOMS) regarding lifestyle improvement found that 49.0% of individuals of both genders are unlikely to begin any lifestyle modifications because they believe they are already healthy. This survey also found that 50% and 30% of individuals improved their lifestyles when faced with illness and abnormal findings in health checkups, respectively (Department of the Japanese Cabinet Office Minister's Secretariat, 2000). Therefore, relative to younger men or women, fewer women < 40 years old would likely be non-applicants, given their lower awareness of the various disorders.

The most highly requested service to improve health promotion was a 'sympathetic workplace policy to promote employee health', followed by 'support from family and friends with regard to dietary assistance and physical activity outside the workplace' (Figure 1). JCOMS reports that 48.8% of men and 58.9% of women require support and

cooperation from family, friends, and acquaintances to achieve lifestyle improvement and health maintenance. As the next most required items, they found that 34.8% of men and 41.7% of women required guidance and professional advice. As such, employees require support, not only from their family and friends, but also from their workplace, if they are to improve their lifestyle. The percentage who requested 'readily available health information seminars to improve participant understanding of health concerns' was significantly lower in those ≥ 40 years old relative to those < 40 years old in both genders. We surmise that older participants may not require these seminars as much as younger participants, as they would be able to consult their family doctor.

Limitations

Participants were regular employees who conducted primarily sedentary work. The SHCs of the present study were implemented by private mutual aid insurance. As such, the content of the questionnaire may have been different from what may have been administered to others with different occupational categories, work types, or health checkup systems. Thus, these results would be applicable only to those in similar occupational backgrounds.

V. Conclusions

The present study population displayed health conditions and SHC awareness levels consistent with those of the average Japanese person. They desired explanations and guidance regarding their clinical data and counseling to aid in weight control. Older individuals may demand less information. Notably, weight management was highly necessary along with effective guidance at the workplace, regardless of gender and age. The main reason given by non-applicants to explain why they declined the SHG was that they felt confident in

their own capacity for health promotion, utilizing the medical and health information already available to them. Lifestyle improvements could be made more effectively if participants were provided with readily available support systems within their home and workplace environments.

Conflict of interest

The authors declare no conflict of interests.

References

- Asahi Shimbun (2014): 'METABO' health checkups struggling to pervade people. The Asahi Shimbun Company, March 23.
- Blackford K, Jancey J, Howat P, et al. (2013): Office-based physical activity and nutrition intervention: barriers, enablers, and preferred strategies for workplace obesity prevention, Perth, Western Australia, 2012. *Prev Chronic Dis* Sep 12;10:E154. doi: 10.5888/pcd10.130029.
- Department of the Japanese Cabinet Office Minister's Secretariat (2000): Survey of public opinion about improvement of lifestyles according to an opinion poll. <http://www8.cao.go.jp/survey/h11/yamai/> (2014.04.09).
- Dote T, Hayashi E, Nakayama S, et al. (2013a): Association between request for health counseling and mandatory routine health checkup parameters in middle-aged Japanese men with metabolic syndrome. *Bulletin Osaka Med College, Bulletin of the Osaka Medical College*, 59(1), 1-8.
- Dote T, Hayashi E, Nakayama S, et al. (2013b): Effects of certain lifestyles modifications on mandatory routine health checkups changes of private university employees over three successive years, *Bulletin of the Osaka Medical College* 59(2),75-83.
- Fukumoto K, Wei CN, Matsuo H et al. (2011): An intervention study to promote self-improvement of lifestyle in a Japanese community: a new health support program. *Environ Health Prev Med* 16, 253-63.
- Ministry of Health, Labor and Welfare (2007): Standard program of mandatory routine health checkup and health counseling (final version), <http://www.mhlw.go.jp/bunya/shakaihoshho/iryouseido01/info03a.html> (2014.04.11)
- Ministry of Health, Labor, and Welfare (2011): The flash report on the implementation status of mandatory routine health checkups in 2011(preliminary figures), <http://www.mhlw.go.jp/stf/houdou/2r9852000002wcts.html> (2014.04.11)
- Ministry of Health, Labor and Welfare (2012): Lifestyles and preventive measures of lifestyle disease at different job types, <http://www.mhlw.go.jp/stf/shingi/2r98520000022whe-att/2r98520000022wjk.pdf#search='1%EF%BC%89+www.mhlw.go.jp%2Fstf%2Fshingi%2F+att%2F2r98520000022wjk.pdf'>(2014.11.11)
- Soga Y, Shirai C, Ijichi A (2013): Association between daily lifestyle and the risk of metabolic syndrome among young adults in Japan An analysis of Kobe city young adult health examination data. *Jpn J Public Health* 60,98-106.
- Rongen A, Robroek SJ, van Lenthe FJ, et al. (2013): Workplace health promotion: a meta-analysis of effectiveness. *Am J Prev Med* 44(4), 406-15.
- Yamada A, Sakai Y (2009): Health awareness of modern Japanese, *Broadcasting Research and Survey, NHK Broadcasting Culture Research Institute*, http://www.nhk.or.jp/bunken/summary/research/report/2009_08/090801.pdf (2014.04.09)