


A Feasibility Evaluation of an Employee-led Brief Health Promotion Program to Promote Lifestyle Change in the Workplace

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Abstract

Background: In Japan, lifestyle-related diseases are a major issue. It is necessary to support employees in making lifestyle changes. As a result, this study intended to test and evaluate the feasibility of a brief lifestyle change program led by employees in the workplace. **Methods:** A 2-group before-and-after test design was used, with employees from a plant in Japan as participants. Intervention was carried out by healthcare specialists for the Standard Intervention Group, while employees who previously received the same intervention performed it for the Employee-run Group. Data were collected twice with a questionnaire, provided in the first and last program sessions. The conditions of the participants during the intervention were compared. **Results:** Of all the participants, 96 were in the Standard Intervention Group and 365 were in the Employee-run Group. The mean age did not differ significantly between the 2 groups. There was a significantly higher ratio of men and night shift workers in the Employee-run Group. Although a significantly smaller proportion of participants set shared behavioral goals for 3 people or self-monitored their lifestyle habits in the Employee-run Group, the lifestyle habits of self-checking, physical measurement, and other items for set goals did not differ. **Conclusions:** Participants in the Employee-run group completed components of the program to the same extent as those in the Standard Intervention Group, suggesting that this program is feasible. However, as the participation rate was lower in some components, improvements to the program and workbook are needed to make those components easier to complete.

Keywords

health promotion, workplace, feasibility study, healthy lifestyle, social support

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Background

Lifestyle-related diseases are the cause of death for about 60% of people in Japan and account for roughly 30% of national medical expenditures.¹ Abnormal findings, such as in blood pressure or blood glucose level, are observed in over half of employees in regular health checkups.² This indicates that there is a need to support employees in making lifestyle changes.

In Japan's system of specific health checkups and guidance, people who are diagnosed as high risk of metabolic syndrome are generally supposed to receive individual face-to-face health guidance. However, there are few occupational health nurses, accounting for only 6.0% of all

public health nurses and 0.4% of all nurses,³ and the low rate of health guidance provided in this system⁴ is a problem. A method is needed to enable employees to carry out health guidance at workplaces without nursing staff.

Programs that use social support such as friends or colleagues have been effective for weight loss.^{5,6} A review of

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the efficacy of short activity bouts incorporated into the organizational routine as part of “regular business” in schools or workplaces showed modest but consistent benefits of such programs.⁷ In other words, implementation of lifestyle change activities at workplaces during work hours using social support may encourage behavior modification.

One program to promote lifestyle change held at individual workplaces is the 3-3 Program in Okayama Prefecture (“33 Program”).⁸ In this brief program that uses social support, teams of 3 people are created and 4 behavior goals are set, and the members of each team encourage each other. This program that was originally created by Shizuoka Prefecture and is widely used by residents there was revised by Okayama Prefecture for easy application in workplaces.

The purpose of this study was to test a brief lifestyle change program led by employees in the workplace and evaluate the feasibility of that program compared to intervention by specialists.

Methods

Study Design, Setting, and Participants

We used a two-group before-after test design for this study. Participants were employees working at a plant of a Japanese company. Participants were twice intervened using a workbook for approximately 30 min at the beginning and end of the three-month program period. In the standard 33 Program, 2 healthcare specialists carry out face-to-face interventions (“Standard Intervention Group”). In our test program, after conducting the standard program, employees from each department that participated in the standard program returned to their respective departments and carried out face-to-face interventions on behalf of specialists (“Employee-run Group”). Participants in both groups were intervened during working hours. The employees who intervened on behalf of specialists had no special training for the 33 Program other than having participated in the Standard Intervention Group.

Program Outline Using a Workbook

The 33 Program comprises 3 components: (1) pre- and post-program evaluation by filling out a lifestyle habits self-check sheet and a physical measurements sheet (the first session and at the end of the program), (2) creation of three-person teams and setting behavior goals based on the pre-program evaluation results obtained in (1) (the first session), and (3) monitoring of behavior goal achievement rate among members and individually and monitoring of number of steps and weight (during the program). Information needed to complete these 3 components is explained in a 12-page workbook using easy-to-understand illustrations and charts.

The lifestyle habits self-check sheet in (1) comprises items about exercise habits (10 items), dietary habits (17 items), and sleep and rest (4 items) that are answered on a 4-point Likert scale to show the level implemented in regular daily life. Physical measurements comprised a sit-to-stand test from a chair, standing on 1 leg with eyes closed, and anteflexion from a standing position. Participants set 1 behavior goal of (2) for each of the 3 types of goals (exercise habits, dietary habits, and sleep and rest) and 1 shared goal for their team of 3 people.

Data Collection

Completion of the 3 program components was compared between the 2 groups. Data were collected twice with a questionnaire, in the first program session and last program session. The questionnaire asked whether participants had completed the pre- and post-program lifestyle habits self-check sheets (items about exercise habits, dietary habits, and sleep and rest) and the pre- and post-program physical measurements sheets. In addition, it asked whether participants had written down initial goals (exercise habits, dietary habits, sleep and rest, shared goal for team of three) and kept lifestyle habit self-monitoring records during the program period.

If a participant left out even 1 lifestyle habit item or physical measurement result, they were regarded as “did not complete” for that category. If a participant did not write a specific goal or any goal for the behavior goals, they were regarded as “did not set” for goals. If a participant did not keep lifestyle habit self-monitoring records, they were regarded as “did not complete” for that part.

Data were collected from August 2016 to December. The study protocol was approved by the Ethics Committee for Department Nursing, Graduate School of Health Sciences Okayama University (approval No. T14-08). We obtained written consent from the participants after providing explanations orally and in writing about the study.

Statistical Analysis

Completion of the 3 components and group differences were tested using chi-square tests and Fisher’s exact test. Analysis was performed with the Japanese version of IBM SPSS statistics version 25 with a significance level of 0.05.

Results

Baseline Characteristics of Participants

There were 478 participants. Excluding employees with unknown allocation (n=17), analysis was performed on 461 participants. Of all the participants, 96 were in the Standard Intervention Group and 365 were in the

Table 1. Group Comparison of Completion of Lifestyle Habits Self-Checking and Physical Measurement.

	Completion	Pretest			Posttest		
		SI Group	E-r Group	P value	SI Group	E-r Group	P value
		n = 96	n = 365		n = 96	n = 365	
n (%)	n (%)		n (%)	n (%)			
Exercise habits	Yes	91 (94.8)	354 (97.0)	.22	95 (99.0)	360 (98.6)	.64
	None	5 (5.2)	11 (3.0)		1 (1.0)	5 (1.4)	
Dietary habits	Yes	95 (99.0)	350 (95.9)	.12	94 (97.9)	353 (96.7)	.42
	None	1 (1.0)	15 (4.1)		2 (2.1)	12 (3.3)	
Sleep and rest	Yes	96 (100)	364 (99.7)	.79	96 (100)	363 (100)	.63
	None	0 (0.0)	1 (0.3)		0 (0.0)	2 (0.5)	
Physical measurement	Yes	94 (97.9)	344 (94.2)	.11	95 (99.0)	364 (99.7)	.37
	None	2 (2.1)	21 (5.8)		1 (1.0)	1 (0.3)	

Abbreviations: SI Group, standard intervention group; E-r Group, employee-run group.

Table 2. Group Comparisons of Whether Behavior Goals Were Set.

	Behavior goals	SI Group	E-r Group	P value
		n = 96	n = 365	
		n (%)	n (%)	
Exercise habits	Yes	75 (78.1)	253 (69.3)	.09
	None	21 (21.9)	112 (30.7)	
Dietary habits	Yes	91 (94.8)	328 (89.9)	.14
	None	5 (5.2)	37 (10.1)	
Sleep and rest	Yes	84 (87.5)	305 (83.6)	.34
	None	12 (12.5)	60 (16.4)	
One shared goal for their team of three people	Yes	88 (91.7)	298 (81.6)	.02
	None	8 (8.3)	67 (18.4)	

Abbreviations: SI Group, standard intervention group; E-r Group, employee-run group.

Employee-run Group. The mean age was 39.4 years (SD=12.9) in the Standard Intervention Group and 37.1 years (SD=14.0) in the Employee-run Group ($P=.15$). There were 80 (83.3%) males in the Standard Intervention Group, significantly less than 354 (97.0%) in the Employee-run group ($P<.01$). There were 11 (11.6%) night shift workers in the Standard Intervention Group, significantly less than 208 (57.0%) in the Employee-run group ($n=460$, $P<.01$). The mean body mass index was 23.5 (SD=3.5) in the Standard Intervention Group and 23.2 (SD=3.2) in the Employee-run Group ($n=457$, $P=.89$).

Group Comparison of Completion of the 3 Program Components

As shown in Table 1, no significant group differences were observed in any category in lifestyle habits self-checking and physical measurement. Table 2 shows whether behavior goals were set. In the Employee-run Group, from highest to

lowest proportion of those who set goals, 89.9% of participants set a dietary habit goal, 83.6% set a sleep and rest goal, 81.6% set a shared goal for 3 people, and 69.3% set an exercise habit goal. In group comparisons of whether behavior goals were set, fewer participants set goals in the Employee-run Group in all categories, and the proportion of participants who set a shared goal for 3 people was significantly lower in this group. In group comparisons of whether lifestyle habit monitoring was performed, the proportion of participants who performed monitoring was significantly lower in the Employee-run Group (23.0%) than the Standard Intervention Group (46.9%).

Discussions

Many intervention studies have been carried out in the workplace, but almost none have examined interventions led by the employees themselves. In the present study, there were no significant group differences in the proportion of

employees who performed lifestyle habit self-checking and physical measurement or the proportion who set behavior goals, with the exception of the shared goal for 3 people. Participants in the Employee-run Group completed these components to the same extent as those in the Standard Intervention Group. This suggests that this program in which employees carry out intervention is feasible.

Since this program took a form that could be implemented according to guidelines set out in the workbook, it is considered that the barriers to implementation were low for the employees who facilitated the program. Some barriers to holding health promotion programs are lack of support from department bosses⁹ and lack of participation by frontline employees,¹⁰ while recognition of the importance of participation and expectation of participation by bosses and colleagues are some factors related to participation.¹¹ In this program, bosses and colleagues cooperated and colleagues ran the program. A program that uses social support among employees may boost the motivation of both those running the program and those participating. A barrier among employees to reducing the duration of sitting time during work is sitting being a workplace norm,¹² suggesting that workplace concepts affect employees. Carrying out programs for each department may influence health consciousness at the workplace. Further studies are needed to clarify how this program changes motivation and health consciousness in those running the program and those participating.

A significantly smaller proportion of participants set shared behavior goals for 3 people or self-monitored their lifestyle habits in the Employee-run Group. In addition, less than 70% of participants set exercise habit goals. These results suggest the need for training the employees who facilitated the program, improvements to the program, and improvements to workbooks in order to make those components easier to complete.

Including details about shared goals for 3 people and exercise habit goals and frequency may be difficult for participants. A weight-loss program that requires the setting of behavior goals specified exercise activities equivalent to 80 kcal and the calorie intake of meals for participants to choose from.¹³ The workbook needs to provide many concrete examples so that participants can choose the behavior goals that suit them. In a program aimed at weight loss where employees must input self-monitoring records online, 83% input records.¹⁴ The workbook needs a simple input method using a smartphone, for example, and a method for issuing alerts. In a program aimed at lifestyle change that uses social support, individuals and teams received points for entering self-monitoring records.¹⁵ It may be useful to add incentives to this program as well, for example when employees submit self-monitoring records or share updates with their team.

Some limitations of this study are that data were only collected at 1 plant and the Employee-run Group had a significantly higher ratio of night shift workers and men. In addition, as the 2 groups were divided by work conditions, there was a large difference in the number of participants between groups. As these differences in attributes may have affected the results, they may not be applicable to all workplaces. In addition, the position, age, and gender of the employees who facilitated the program may have been confounding factors. In the future, it will be necessary to consider their characteristics as well. However, it is significant in respect to this study to develop a program that lowers the barriers to implementation in the workplace and to evaluate the feasibility of using employees to facilitate the program.

Conclusion

This study demonstrated the feasibility of a brief lifestyle change program and suggested that employees themselves can carry out intervention. This finding may aid in the investigation of methods for supporting lifestyle change in the workplace.

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Declaration of Conflicting Interests

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