

Effects of Stress Management Program for Teachers in Japan: A Pilot Study

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Abstract: Effects of Stress Management Program for Teachers in Japan: A Pilot Study: Akihito SHIMAZU, et al. Department of Psychology, Hiroshima University Graduate School of Education—The aim of this study was to examine the effects of a stress management program for teachers on their stress responses, social support, and coping. Participants (n=24) were assigned to either an intervention or a waiting list control group. A five-session program, including psychoeducation, group discussion, role-playing and relaxation training, was conducted for the intervention group at two week intervals. Eight participants from each of the groups responded to pre- and post-intervention questionnaire surveys. The positive intervention effect was significant for social support from co-workers ($p=0.035$), whereas the negative intervention effect was significant for proactive coping ($p=0.033$). No significant effect was observed for stress responses (vigor, anger, fatigue, anxiety, depression, and somatic stress responses) ($p>0.05$). The positive intervention effect was marginally significant for social support from co-workers ($p=0.085$) and anger ($p=0.057$) among those who at first had high stress response scores in the pre-intervention survey (n=5 and n=4 for the intervention and waiting list control groups, respectively). Furthermore, the positive intervention effect was significant for social support from co-workers ($p=0.021$) and marginally significant for resignation coping ($p=0.070$) among those who at first had high job control scores (n=4 and n=5 for the intervention and waiting list control groups, respectively). Results showed that the stress management program conducted in this study contributed to increasing social support from co-workers. This study suggests that a program that focuses on a particular subgroup (e.g., those with high stress responses or high job control) might be effective

in enhancing coping skills, increasing social support, and reducing stress responses.

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Stress management intervention studies in the workplace have increased during the past two decades^{1–13}. It is often assumed that there are two basic approaches to interventions in the workplace^{1, 9, 10}. One is an organization-oriented approach, which aims to identify and improve a stressful work environment, and the other is individual-oriented and aims to enhance the coping abilities of individual employees. The latter approach is of particular interest to occupational health psychologists, who regard employee stress responses as the results of coping with stressful work environments, and who frequently help employees cope more effectively¹¹. Our study was conducted on the basis of the individual-oriented approach.

There are various kinds of intervention techniques in the individual-oriented approach. Cognitive-behavioral training, stress measurement and personalized feedback, meditation, relaxation training, and physical fitness training are all examples. Accumulated experiences from individual-oriented intervention showed that cognitive-behavioral training or a combination of cognitive-behavioral training with relaxation training was more effective than other techniques^{11, 12}. In accord with that evidence, our intervention program was planned combining the two techniques.

All participants in this study were teachers, for whom job stress has become a problem of especially serious proportions because it affects on their psychological well-being and the future of the profession. In Japan, 0.24% of teachers were suspended from their jobs in 2000 because of a mental disorder; the highest rate for the last

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seven years¹⁴). Previous studies^{15–18}) have revealed several problem areas for teachers, such as poor school environment, student misbehavior, poor working conditions, personal concerns, relationships with pupils' parents, time pressure, or inadequacy of training. In almost all studies, student misbehavior was consistently identified as the most stressful problem¹⁸). Furthermore, in Japan, a lack of social support from co-worker teachers has a great impact on stress responses second to student misbehavior¹⁸). Considering these situations, it is expected that a program that aims to improve teachers' skills to cope with student misbehavior, or to increase their social support will probably be effective, but in Japan there have been few empirical studies of individual-oriented interventions for teachers.

In line with the above discussion, we conducted in a group an individual-oriented stress management program for teachers that focused on their coping skill and social support. Cognitive-behavioral training would improve their coping skills, and the group process would increase their social support, through interaction with other participants and leading them to realize the existence and importance of social support¹⁹). Furthermore, relaxation training, improved coping skills, and increased social support should decrease their stress response.

In this study, we examined the effects of our stress management program for teachers on their coping skills, social support, and stress responses. In addition, exploratory analyses were conducted to determine variables relating to the effectiveness of the interventions. This study took up participants' stress response and job control level in a baseline survey. Recent review articles have claimed that cognitive-behavioral interventions appear effective in jobs with high job control; because high job control can allow participants to exercise coping skills they learned through an intervention program^{12, 20}). There is also some evidence that they seem to be effective among those at first displaying higher stress responses²⁰). Bunce²⁰) claimed that the greater the population variance in the initial levels of stress responses, the more unlikely it is that all individuals in that population require intervention.

Methods

Participants and study design

This study was part of a project planned by a particular prefectural board of education in Japan. Its aim was to enhance the coping ability of teachers in dealing with student misbehavior. Participants (n=24) were public school teachers who worked at four primary schools (n=12), a junior high school (n=6), or a high school (n=6). They were recruited through the school they worked at. Before entering the study, all participants were informed about the project by us with an information pamphlet. All of them consented to enter the study, and were

assigned to an intervention group (n=12) or a waiting list control group (n=12). The day or time that participants were able to allocate to the program was different according to the school they worked at because of the school activities schedule. Therefore, we assigned them to one of the two groups according to the school.

A five-session program that included psychoeducation, small-group discussion, role-playing, and relaxation training was conducted for the intervention group. The interval between sessions was from two to four weeks. To evaluate the intervention effect, questionnaire surveys were administered to both groups before and after intervention. A pre-intervention survey was conducted at the beginning of the first session and the post-intervention survey was conducted one week after the final session.

We excluded from the analyses those who had been absent from sessions more than once, or who had not responded to the questionnaire either at pre- or post-survey. This procedure reduced the numbers to eight (2 males and 6 females) for the intervention group and eight (2 males and 6 females) for the waiting list control group. The average age was 44.8 yr (SD=4.0) and 44.0 yr old (SD=5.0) for the intervention and waiting list control groups, respectively, and their average job tenure was the same, 21.3 yr (SD=7.1 and SD=6.2, respectively). Seven participants from each group were married. The intervention and waiting list control groups did not significantly differ in any of the demographic variables noted above.

Intervention program

As described in the introduction section, our intervention program was planned combining cognitive-behavioral training and relaxation training. Although there are various kinds of techniques in cognitive-behavioral approach, we adopted Stress Inoculation Training (SIT)²¹) that consists of three overlapping phases; (1) 'conceptualization' is an education phase that emphasizes the development of a warm, collaborative relationship through which a careful assessment and problem reconceptualization are completed, (2) 'skill acquisition and rehearsal' target and develop a repertoire of coping skills, and (3) 'application and follow-through' focuses on activities that transfer coping skills to real life and prevent relapse. We excluded the third phase because of time limitations.

Each session was held in a small conference room of a junior high school after normal work hours. Two clinical psychologists trained in cognitive-behavioral therapy administered the program. Each session was two hours long. Details of the program contents were as follows.

Session 1: Participants were asked to answer a questionnaire. Then, they were taught relaxation theory and, through a two-step process, the Progressive Muscle

Relaxation (PMR) technique²². First, participants deliberately apply tension to certain muscle groups, and then they stop the tension and turn their attention to noticing how the muscles relax as the tension flows away. They were instructed to conduct the PMR training every day as a home exercise, following playing a taped cassette for 8 min.

Session 2: A lecture on student misbehavior was given after PMR training and a review of the first session. The relationship between student stress and their misbehavior was explained to participants, illustrating the psychological stress model²³. It was explained that coping with stressors played an important role in determining psychological, physiological, and behavioral stress responses and that helping students to cope with stressors more effectively led to decreasing their negative responses.

Session 3: A lecture on the effects of the psychosocial school environment on students' health was given after PMR training and a review of the second session. The importance of decision latitude, social support, and psychological reward was emphasized; illustrating theoretical models relating to job stress such as the job demand-control model²⁴ and the effort-reward imbalance model²⁵. Participants then discussed how to improve school environments with reference to the theoretical models described above.

Session 4: Small group discussion was conducted after PMR training and a review of the third session. In the discussion, the 12 participants were divided into three groups. Each group identified one stressful situation they had experienced in dealing with student misbehavior. They worked out as many strategies as possible to cope with that situation, and discussed the effect of each strategy on improving the situation.

Session 5: A role-playing program was conducted for each group after PMR training and a review of the fourth session. Groups were the same as in session 4. In the role-playing, one group member role-played the teacher, another a student, and the others observed. The situation was the one identified in Session 4 by each group. The coping strategy that the "teacher" employed in the role-playing was selected among those that they worked out in the previous session. After role-playing, all participants reviewed the interaction between "teacher" and "student", praised the good points in a teacher's coping with student misbehavior, and discussed how to cope more effectively.

Measures for intervention effect

The questionnaire included the following scales: stress response, social support, job control, and coping scales.

1) Stress response was assessed by using 29 items from the Brief Job Stress Questionnaire (BJSQ)²⁶, scored on a four-point Likert scale. The stress response scale had the following 6 subscales: vigor (3 items, $\alpha=.82$), anger

(3 items, $\alpha=.90$), fatigue (3 items, $\alpha=.83$), anxiety (3 items, $\alpha=.73$), depression (6 items, $\alpha=.85$), and somatic stress responses (11 items, $\alpha=.79$).

2) Social support was assessed by using 9 items from the BJSQ, scored on a four-point Likert scale. The social support scale had the following 3 subscales according to the support resources: supervisor support (3 items, $\alpha=.60$), co-worker support (3 items, $\alpha=.74$), and family/friend support (3 items, $\alpha=.68$). Each item was reverse scored so that high scores indicated a high level of social support.

3) Job control was assessed by using 3 items from the BJSQ, scored on a four-point Likert scale ($\alpha=.63$). Each item was reverse scored so that high scores indicated a high level of job control. The total score was used as an indicator of job control.

4) Coping with student misbehavior was assessed by using 31 items from the Job Stress Scale (JSS)²⁷, scored on a four-point Likert scale. Instructions were slightly modified in order for respondents to identify the most distressing situation that they had experienced during the previous three months in dealing with student misbehavior. Respondents indicated the extent to which they had used the strategy described by the particular item. The coping scale had 5 subscales: proactive (9 items, $\alpha=.82$), distancing (7 items, $\alpha=.79$), seeking social support (5 items, $\alpha=.82$), resignation (5 items, $\alpha=.65$), and restraint (5 items, $\alpha=.70$).

Statistical procedure

The intervention effects were evaluated by comparing indicators of the intervention and waiting list control groups at pre- and post-survey. Analysis of variance (ANOVA) with repeated measurements was used to test the statistical significance of the intervention effect (time \times group) on each indicator. Furthermore, those analyses were conducted for subgroups classified by the total stress response or job control score (low/high) in the pre-intervention survey. In calculating the total stress response score, each item on the vigor scale was reverse scored so that a high score indicated a high level of stress response (the alpha coefficient for 29 items was .93). Each subgroup was defined according to the respective median in the pre-intervention survey; medians were 54 and 66 at pre- and post-intervention surveys, respectively, for total stress response scores, and 8 and 7, respectively, for job control scores. The statistical analyses were performed with the SAS version 6.12 for Windows.

Results

Intervention effects among all participants

Table 1 shows the results of the intervention effects among all participants.

As to stress response, no intervention effect was observed for any of the subscales (vigor, anger, fatigue, anxiety, depression, and somatic stress responses, $p>0.05$,

Table 1. Intervention effects on stress reponse, social support and coping for all participants

Variable	Range	Pre		Post		Intervention effect
		Mean	(SD)	Mean	(SD)	
Stress response						
Vigor						
Intervention	3–12	6.4	(1.2)	6.4	(2.5)	p=0.519
Control		6.4	(3.0)	5.9	(2.6)	
Anger						
Intervention	3–12	7.3	(2.4)	6.8	(1.2)	p=0.120
Control		6.4	(0.9)	7.8	(2.0)	
Fatigue						
Intervention	3–12	6.9	(2.1)	7.4	(2.8)	p=0.294
Control		6.3	(2.5)	8.1	(3.4)	
Anxiety						
Intervention	3–12	6.4	(2.2)	7.4	(2.1)	p=0.582
Control		5.6	(1.3)	6.1	(2.1)	
Depression						
Intervention	6–24	11.3	(3.7)	12.6	(5.0)	p=0.587
Control		11.3	(3.9)	11.9	(3.4)	
Somatic stress responses						
Intervention	11–44	17.8	(3.6)	18.6	(4.5)	p=0.969
Control		19.5	(5.8)	20.3	(7.0)	
Social support						
Supervisor						
Intervention	3–12	6.3	(1.3)	6.9	(1.6)	p=0.147
Control		7.5	(1.9)	7.1	(1.6)	
Co-worker						
Intervention	3–12	7.4	(1.1)	8.6	(1.5)	p=0.035
Control		8.1	(2.5)	7.9	(1.7)	
Family/Friend						
Intervention	3–12	8.9	(1.6)	9.4	(2.2)	p=0.139
Control		11.3	(1.4)	10.5	(1.5)	
Coping						
Proactive						
Intervention	9–36	20.9	(4.9)	19.3	(3.8)	p=0.033
Control		18.6	(4.0)	20.8	(3.3)	
Distancing						
Intervention	7–28	9.6	(1.8)	13.4	(3.2)	p=0.243
Control		10.3	(2.6)	12.1	(3.8)	
Seeking social support						
Intervention	5–20	9.9	(3.4)	10.5	(2.6)	p=0.096
Control		8.8	(3.2)	11.1	(3.6)	
Resignation						
Intervention	5–20	9.3	(3.1)	11.1	(1.0)	p=0.590
Control		9.6	(3.0)	10.8	(2.8)	
Restraint						
Intervention	5–20	10.5	(2.8)	11.5	(1.9)	p=0.206
Control		11.6	(2.5)	11.0	(2.3)	

Note. Analysis of variance (ANOVA) with repeated measurements was used to test the statistical significance of the intervention effect (time × group) on each indicator.

respectively). As to social support, the intervention effect was significant for social support from co-workers ($p=0.035$): the degree of support increased in the intervention group, but it remained unchanged in the waiting list control group. No intervention effect was observed for social support from supervisors or family/friend ($p>0.05$, respectively). As to coping, the intervention effect was significant but in an unexpected direction for proactive coping ($p=0.033$): the degree of proactive coping remained unchanged in the intervention group, but it increased in the waiting list control group. However, no intervention effect was observed for distancing, seeking social support, resignation, or restraint ($p>0.05$, respectively).

Exploratory analyses

1) Intervention effects according to total stress response level

Among those who at first had low stress response scores, no intervention effect was observed for any subscale regarding stress response, social support, or coping ($p>0.05$, respectively).

Among those who at first had high stress response scores, the intervention effect was marginally significant ($p=0.085$) for social support from co-workers ($n=5$ and $n=4$ for the intervention and waiting list control groups, respectively). Average co-worker support scale scores (SDs) were 7.2 (0.8) and 8.6 (0.9) in pre- and post-intervention surveys, respectively, for the intervention group, and 8.0 (2.8) and 7.3 (0.5), respectively, for the waiting list control group. And, the intervention effect was marginally significant ($p=0.057$) for anger in the high stress response group. Average anger scale scores (SDs) were 7.8 (2.5) and 6.8 (1.3), for the intervention group, and 6.8 (1.0) and 8.5 (1.3), for the waiting list control group. No intervention effect was observed for any other subscales ($p>0.05$, respectively) among the high stress response group.

2) Intervention effects according to job control level

Among those who at first had low job control scores, no intervention effect was observed for any subscale for stress response, social support, or coping ($p>0.05$, respectively).

Among those who at first had high job control scores, the intervention effect was significant ($p=0.021$) for social support from co-workers ($n=4$ and $n=5$ for the intervention and waiting list control groups, respectively). Average co-worker support scale scores (SDs) were 7.8 (1.3) and 9.0 (1.6) in pre- and post-intervention surveys, respectively, for the intervention group, and 8.2 (2.2) and 8.2 (2.2), for the waiting list control group. And, the intervention effect was marginally significant ($p=0.070$) for resignation coping. Average resignation scale scores (SDs) were 7.3 (1.3) and 11.0 (1.4) in pre- and post-intervention surveys, for the intervention group, and 10.8

(3.0) and 11.6 (3.1), for the waiting list control group. No intervention effect was observed for any other subscale ($p>0.05$) in the high job control group.

Discussion

The overall purpose of this study was to examine the effects of our stress management program for teachers on their stress responses, social support, and coping. The main finding of the intervention was an increase in social support from co-workers. A possible explanation for the improved social support is that interaction with other participants through group discussion or role-playing might have led participants to realize the existence and importance of social support that had not been perceived before. Another possible explanation is that participation in the program might increase the opportunity to interact with other participants who worked at the same school, which might increase the perception of co-worker support.

Furthermore, exploratory analyses revealed that the intervention decreased anger levels in the subgroup with high stress response but increased the use of resignation coping in the subgroup with high job control.

As to the decrease in anger levels, those who at first had high stress responses were likely to be confronted in more stressful situations and have higher motivation for problem solving, which increased the intervention effects. As to increased use of resignation coping, high job control might allow participants to exercise skills they had learned through the program¹². High job control might also allow participants to give priority to the confronted problems and to leave problems with lower priority. Many problems are minor and self-limiting, and ignoring them is often a reasonable strategy, because mobilizing a great deal of effort for relatively minor problems may end up in a greater stress response²⁸. These results suggest that a program that focuses on a particular subgroup (e.g., those with high stress responses or high job control) might be more effective.

Nevertheless, an unexpected finding was also obtained. The degree of proactive coping remained unchanged in the intervention group, whereas it increased in the waiting list control group. Because we assigned participants to an intervention or a waiting list control group according to the school they worked at, there might be differences between two groups in the content or degree of job stressor that was not measured in this study. In turn, this led to the differences in the use of proactive coping.

Furthermore, contrary to our expectations, no intervention effect was observed for coping (except for proactive coping) and stress response in any analyses for all participants. A number of factors may explain this lack of effect.

First, the anonymous questionnaire revealed that although participants were recruited through the school they worked at, only 23.5% of the participants joined the

program voluntarily; 64.7% joined under the direction of their manager, and the remaining 11.8% joined for other reasons. This suggested that most participants were less motivated towards the program. Eriksen *et al.*¹⁰ claimed that motivation is an important factor for an intervention effect.

Second, participants might not have had enough opportunity to reduce their resistance to the program. Including group discussion in every session may be one strategy to improve their involvement in the program. Previous studies^{3, 8)} reported that participant involvement in the planning and doing of a program was one of the success factors for intervention.

Third, the school activities schedules made it difficult for us to conduct the program on a regular basis. The interval between sessions was from two to four weeks, which might have prevented participants from learning systematically. And, the school activities schedule made it difficult for us to randomly assign participants to an intervention or a waiting list control group. Therefore, there may be an uncontrollable bias between the two groups. Given this limitation, we felt the chosen method was better than having no control group at all, because there were many similarities between the two groups at the beginning of the program.

Fourth, we could not recruit enough participants to ensure statistical power, because this study was part of a project planned by a particular prefectural board of education. The intervention effect may be underestimated because of the small number of participants.

Fifth, we could not compose the intervention program according to the school that participants worked at, which could lead to decreasing intervention effects. Because each school could have different job content or specific job stressors, it seems desirable to assess the specific stressor at the school where participants work, and then to compose the program according to the school. The greater the participant variance in job content or job stressor, the more unlikely it is that the conducted program is suited to the individual's requirements.

Sixth, we could not conduct an 'application and follow-through' session because of time limitations. The lack of this session might prevent participants from transferring the acquired coping skills to real life, which decreased the intervention effect. Again, the post-intervention survey was conducted one week after the final session, but long-term intervention effects were not evaluated. Because it may take some time to transfer the acquired coping skills to real life, long-term observation can clarify any intervention effects.

Finally, because most participants were experienced teachers (the average job tenure was 21.3 yr), they might already have appropriate skills to deal with student misbehavior, which would also have decreased the intervention effect. The intervention may be more

effective among those who are less experienced and feel a greater need to acquire such skills.

The reported findings are restricted to a teacher group in a particular district in Japan and it is not possible to apply these findings to other occupational groups and employment sectors. But this study has the potential for positive implications of individual-oriented stress management interventions. An intervention program that is designed according to the participants' stress response level or work environment can be more effective in enhancing coping skills, increasing social support, and reducing stress responses.

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