

Review

Development of an Evidence-based Guideline for Supervisor Training in Promoting Mental Health: Literature Review

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Abstract: Development of an Evidence-based Guideline for Supervisor Training in Promoting Mental Health: Literature Review: Akizumi Тѕитѕимі, Occupational Health Training Center, University of Occupational and Environmental Health—Objective: To review published studies to assess the effects of supervisor training on the mental health of subordinate workers, and thereby develop an evidence-based guideline for supervisor training in promoting workers' mental health. Method: Seven studies that assessed the effect of supervisor training, whose outcomes included psychological stress responses of (subordinate) employees, were retrieved for assessment from PubMed, the Cochrane Library, MEDLINE, the Web of Science, and Ichushi-Web. An additional five studies were also reviewed for discussion on the content and types of training. Results: Providing supervisors with necessary skills and information on mental health, including relevant occupational stressors, has a favorable effect on workers' mental health, at least in the short term. The subject populations had a background of requiring mental health measures. The effect of the training varied depending on the participation rate of supervisors, suggesting that the overall effect on an organization may be limited without a certain extent of participation by supervisors. There is no evidence of a long-term (over 1 yr) effect of supervisor training, and the effect of education on the supervisors' knowledge and behavior tends to be lost after 6 mo. **Conclusion:** The current evidence indicates that the following items should be taken into consideration for the development of a guideline for supervisor training: identification of high-priority populations requiring education, development of a strategy to improve the participation rate in education, inclusion of occupational stressors as well as basic information in workplace

mental health teaching materials, and regular repetition of the program.

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Key words: Evidence-based guideline, Intervention, Mental health, Supervisor education, Review, Workplace

The primary prevention of mental health problems among workers has become a high-priority health care issue in many workplaces. Supervisor training is one of the most important measures to this end, because supervisors' attitudes and skills were found to be related to favorable working conditions and mental health among their subordinates¹⁾. Although the effect of supervisor training on workers' mental health has been suggested through research²⁾, its utilization rate in workplaces in Japan is only 35%³⁾. Reasons found for the lack of mental health measures in workplaces included "lack of knowledge on such measures" as well as lack of personnel who are in charge of the issue³⁾. Therefore, the development of an evidence-based guideline and the preparation of instructions for training that can be carried out in workplaces may promote the training of supervisors. Although a trial of this process has begun⁴⁾, to the best of my knowledge there have been no systematic reviews on the effect of supervisor training on workers' mental health. This study reviewed relevant effect assessment studies, for the purpose of developing an evidence-based guideline for supervisor training, as a primary measure to support workers' mental health.

Methods

The studies published within the period of January 2000 to June 2009 were searched from the retrieval databases of PubMed, the Cochrane Library, MEDLINE, the Web of Science, and the Ichushi-Web (a Japanese medical science literature database), with the following keywords: (education OR training) AND (supervisor OR manager) AND (job stress OR mental health).

Controlled studies whose outcomes included the

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occupational stressors and stress reactions of workers were selected. If any study was reported in duplicate, only one of the reports was reviewed.

The overall effect of supervisor training was assessed, and the results of each study were considered in terms of target population, content and types of training, duration of training and effect assessment, for reference in our development of the planned guideline. For the discussion of the content and types of training, additional literature references were included as needed.

Results

In total, 188 studies (including 10 reviews) were retrieved. Of those, seven controlled studies that met the inclusion criteria were selected^{5–11)} (Tables 1 and 2). For the discussion of the content and types of training, five additional studies were included^{1, 12–16)}.

Summary of retrieved literature: randomized controlled trials (Table 1)

In one study, managers in a computer engineering company were assigned to either a training group (n=9) or non-training group (n=7), and the effect of web-based self-directed learning was examined. The content consisted of the knowledge and roles required of supervisors as laid out in the Japanese Guideline for Workers' Mental Health in the Workplace¹⁷⁾ and quizzes were given in each chapter as a learning review. Three months after the end of the program, it was found that the scores for supervisor support had greatly decreased among the subordinates of the non-training-group supervisors, while these scores did not decrease among the subordinates of the training-group supervisors, yielding a statistically significant intervention effect. This difference was particularly remarkable for the question item regarding whether supervisors listen to their subordinates' personal problems. There was no difference between the two groups with regard to support from colleagues, mental stress reactions, or other psychosocial occupational stressors⁵⁾.

The effect of the same form of web-based self-directed learning was examined in a workplace-based randomized controlled study⁶). In total, eight sales- and service-related workplaces were designated as either training workplaces or non-training workplaces. Three months after the intervention, the reported sense of work control among subordinates in the non-training workplaces (control group) had decreased, while reported sense of work control did not decrease among subordinates in the training workplaces (intervention group), which indicates the effect of the intervention. In addition, friendly atmosphere reports increased in the intervention group, but these were unchanged in the control group, indicating a statistically significant effect of the intervention. There was no significant effect on other occupational stressors, support from supervisors or colleagues, or psychological stress reactions.

A lecture on the necessary knowledge and roles required of supervisors as laid out in the Japanese Guideline for Workers' Mental Health in the Workplace was provided to supervisors in a sake brewing company who were randomly assigned to an intervention group. Other components that were carried out with the intervention group included: a lecture on appropriate attitudes and listening and specific response skills (active listening); a presentation of model listening behavior; role playing in which participants practiced the roles of listener, speaker, and observer in turn for 20 min per session; and practical training in active listening with repeated reviews of each session⁷⁾. In subordinates whose performance was rated by supervisors in the intervention group and in the control group, respectively, changes in psychological distress and self-assessment of job performance at 3 mo post-training were compared. An education effect was not observed in all subjects, but a significant effect was observed among young clerical workers who had been worried about their work environment.

Summary of retrieved literature: quasi-experimental studies (Table 2)

In one study, all the workplace supervisors in the intervention workplace (n=2,068) attended lectures given by a counselor over the course of a year on proper attitudes for understanding the ideas and feelings expressed by subordinates, in addition to effective workplace management that takes into consideration the individual differences among subordinates, and measures to be taken to support the independence of subordinates. It was found that reported support from supervisors increased and the frequency of mental health complaints in the workplace decreased, compared with the control workplace⁸⁾.

Among four private hospitals owned by a particular health care organization located in the northeastern United States, two hospitals delivered salary cuts to all nurses as a result of a revision of their salary system. One of the pay-cut hospitals and one non-pay-cut hospital were randomly chosen as the subject hospitals, and 19 supervising nurses from the pay-cut hospital and 21 from the non-pay-cut hospital received two 4-hour sessions, consisting of a lecture on interactional justice, a case study review, and a role play activity, carried out over 2 consecutive days (during office hours), 5 wk following the salary system revisions¹⁴⁾. Immediately after and 6 mo after the training, the rate of insomnia significantly increased in the nurses of the pay-cut hospital, but the increase in insomnia complaints was suppressed in the nurses working under the supervisors who received the training⁹⁾.

Supervisors in an insurance company received education to enhance their managing ability, so as to improve the psychosocial occupational environment, for 2 h every other week for 1 yr (60 h in total)¹⁰. The training on the

Table 1. Effect assessment of supervisor training: randomized controlled trials

Author Year published	Subjects and specific workplace circumstances	Content and type of training	Time of assessment	Main findings
Kawakami <i>et al.</i> 2005 ³⁾	Managers in an information technology company were randomly assigned to an intervention group (n=9) or control group (n=7), and their 92 and 84 subordinates, respectively, were compared.	Roles of supervisors as specified in the guideline from the Ministry of Health, Labour and Welfare.	Pre-training and 3 mo post- training	Support from supervisors decreased in the control group, while it was maintained in the intervention group (particularly for the item regarding whether supervisors listen to subordinates' personal problems).
		Web-based supervisor training.		
Kawakami <i>et al.</i> 2006 ⁴⁾	Eight sales- and service-related workplaces were randomly assigned to an education group or control group, and 81 subordinates of 23 supervisors in the education workplaces were compared with 108 subordinates of 23 supervisors in the control workplaces.	Roles of supervisors as specified in the guideline from the Ministry of Health, Labour and Welfare.	Baseline and 3 mo post-training	Sense of work control decreased in the control group, but did not change in the intervention group. Friendly atmosphere in the workplace increased in the intervention group.
		Web-based supervisor training.		
Takao <i>et al.</i> 2006 ⁵⁾	Supervisors in a sake brewing company were randomly assigned to an intervention group (n=24) or control group (n=22). Subordinates whose performances were rated by the supervisors in either of the above groups (n=154 and n=101, respectively; including some missing data in some analysis items) were compared.	Roles of supervisors as specified in the guideline from the Ministry of Health, Labour and Welfare.	Pre-training and 3 mo post- training	A significant effect was observed in mental stress reactions and job performance of young clerical workers who had been worried about their work environment.
	This was a small manufacturing company with unfavorable prospects because the sales of their products had decreased. In particular, male clerical employees with a short employment history with the company had	Active listening practice using role playing.		
	greater anxiety (due to occupational instability).	Training performed in half a day.		

 Table 2.
 Effect assessment of supervisor training: quasi-experimental studies

Author	Subjects and specific workplace circumstances	Content and type of training	Time of	Main findings
Published year			assessment)
Kawashima et al. 1996 %	Employees of an electricity service-related workplace whose supervisors received training (n=2,068) were compared with the employees of a control workplace (n=1,004). In the intervention workplace, all managers and assistant managers received the training (the number of the supervisors was not specified).	A part-time counselor lectured for 1 h at a time throughout 1 yr, on proper attitudes for understanding the ideas and feelings expressed by subordinates, workplace management that takes into consideration the individual differences among subordinates, and measures to be taken to support the independence of subordinates.	Pre-training and 1 yr post-training	Complaints regarding relationships with supervisors, depression scores, systolic blood pressure, and rate of subordinates being inadequately supported by their supervisors all decreased in the intervention group.
Greenberg 2006 ^η	Nurses in four private hospitals owned by a particular health care organization located in the northeastern United States. Two hospitals delivered salary cuts to all nurses as a result of a revision of their salary system. One of the pay-cut hospitals and one non-pay-cut hospitals were selected, and 19 supervisors of the former and 21 of the latter received training at the 5-week point following the salary cuts, and subordinates of the educated supervisors (136 and 105 subordinates, respectively) were compared with subordinates of non-educated supervisors (130 and 96 subordinates, respectively).	Two4-hour sessions consisting of a lecture on interactional justice, a case study review, and role playing were performed on 2 consecutive days (during office hours).	Immediately after and 6 mo after the training	Insomnia significantly increased in nurses of the pay-cut hospital, but the increase in insomnia complaints was suppressed in the nurses working under the supervisors who received the training.

 Table 2. Effect assessment of supervisor training: quasi-experimental studies (continued)

Theorell et al. 2001 8)	Theorell et al. The intervention group included 223 employees and the control group was 260 employees of an insurance company. Forty-two supervisors in each group participated in an education program. The company was facing the prospect of other companies competing in their exclusive business of retirement pensions for salaried workers. The training was performed for the purpose of improving the competency of supervisors in dealing with the increased anxiety and demoralization that could arise during the reorganization of the business structure.	A training program to enhance Pre-training and managing ability so as to 1 yr post-training improve the psychosocial occupationalenvironment (job demand, control, support, and effort-reward imbalance) was carried out for 2 h every other week for 1 yr (60 h in total).	Pre-training and 1 yr post-training	A training program to enhance Pre-training and Serum cortisol decreased in the managing ability so as to 1 yr post-training intervention group. Sense of work improve the psychosocial occupational environment (job demand, control, support, and effort-reward imbalance) was carried out for 2 h every other week for 1 yr (60 h in total).
Tsutsumi et al. 2005 ⁹⁾	Tsutsumi <i>et al.</i> In a prefectural government workplace (with 1,644 workers in total) Roles of supervisors as where measures against increasing mental health cases were specified in the guideline from required, 473 supervisors voluntarily participated in a supervisor the Ministry of Health, Labour training program. Workers who responded to surveys before and and Welfare. after the training were compared between the departments in which one-third or more supervisors attended the training and the departments with a lower attendance rate (674 and 190 workers, listening.	Roles of supervisors as specified in the guideline from the Ministry of Health, Labour and Welfare. Single lecture on active listening.	Pre-training and 3 mo post-training	A significant effect on psychological stress reactions was observed in the departments in which one-third or more supervisors attended the training. The educated supervisors showed favorable changes in knowledge on and attitudes/behavior toward mental health.

Table 3. Evidence-based guideline for supervisor mental health training

- 1) All supervisors should receive mental health training.
- 2) High-priority populations requiring the training should be identified before implementation.
- 3) The training should be planned with a focus on the needs and situation of the individual workplaces.
- 4) The training content should be determined based on the administrative level of the subject supervisors.
- 5) The training content should include the items recommended in the Japanese Guideline for Workers' Mental Health in the Workplace and representative items related to occupational stressors.
- 6) The training should aim for behavior modification among supervisors.
- 7) Supervisor training should be performed repeatedly rather than only once.
- 8) Supervisor training should be performed yearly if possible.
- 9) Stepwise education should be planned by dividing and spreading out the content of the education.

psychosocial occupational environment covered factors in an occupational stress model such as job demand, control, support, and effort-reward imbalance. Supervisors and their subordinates in the intervention group showed a decrease in serum cortisol and an increase in job control compared with the employees in the control group.

Supervisors at a prefectural government workplace learned about roles and necessary knowledge required for supervisors as set out in the Japanese Guideline for Workers' Mental Health in the Workplace, and about making themselves available for personal consultations. In addition, they learned how to conduct advisory consultations for subordinates in the role of supervisor, the theory and skills of active listening, effects of active listening, and situations in which active listening can be used. Three months after the completion of the program, psychological distress and subjective job performance improved in workers of the departments in which one-third or more supervisors attended the lecture, compared with the workers of the departments with a lower attendance rate. The educated supervisors showed favorable changes in knowledge on and attitudes and behavior toward mental health. Among the reported behaviors, the following items showed significant changes between pre- and posteducation: identification and improvement of problems in the workplace environment and referral of sick subordinates to appropriate institutions¹¹⁾.

Discussion

Overall effect assessment

Although the number of controlled studies was limited, their findings indicated that supervisor training in which necessary information and skills were provided to supervisors has a favorable effect, at least in the short term, on mental health, insomnia, and job performance among workers^{5–11)}. The effect of the training varied among the subjects, and the overall effect on the organization may be limited without a certain extent of participation by supervisors¹¹⁾. Improved knowledge and favorable behavior modifications among supervisors may be one of the mechanisms that lead to the effect of supervisor

training¹¹⁾.

Quasi-experimental studies generally supported this hypothesis. Randomized controlled trials reported significant findings, but these were not from the analysis of the primary outcome (i.e. effect on stress reactions) but from sub-analyses of sub-populations and sub-items. Based on the results, the level of current evidence on supervisor training was evaluated as moderate, and the effect of mental health education for supervisors was evaluated as being reasonably demonstrated.

Based on the current evidence and following discussions on relevant implications of supervisor training in the workplace, I propose a guideline for supervisor training toward the promotion of mental health, outlined in Table 3

Target populations

It has been suggested that the higher the proportion of supervisors receiving training, the more effective the training may be¹¹. In other words, the overall effect on the organization may be limited without a certain extent of participation by supervisors. Therefore, it is recommended that all supervisors receive mental health training, and a strategy to improve the participation rate in such education programs is necessary.

Populations that are particularly responsive to supervisor training, such as those who are anxious about their occupational expectations, have backgrounds that require mental health measures, suggesting that there are populations in which education/training may be more effective^{7, 9-11)}. Thus, it is suggested that it would be effective to identify high-priority populations for this education/training prior to implementing training programs. It also seems preferable to plan this training by focusing on the needs and current situations of the subject workplaces.

Supervisors include those in management (with subordinates) as well as those in administration. For those in management, education on supporting their subordinates and cooperation with occupational health specialists are important, while for administration supervisors, an

understanding of how to construct the corporate environment is of greater importance¹⁶. The content of training should thus be determined depending on the administrative level of the subject supervisors.

Content and types of training

The items required to be learned by supervisors as set out in the Japanese Guideline for Workers' Mental Health in the Workplace (see Appendix¹⁷⁾)^{5-7, 11)}, as well as education on representative occupational stressors and methods to improve the workplace environment^{9, 10)}, have been demonstrated to be effective. Therefore, supervisor training content should include the items recommended in the Japanese Guideline for Workers' Mental Health in the Workplace and representative items related to occupational stressors.

Since the effect of supervisor training may result from their improved knowledge and favorable behavior modifications¹¹⁾, the training should aim to achieve these outcomes.

It has been suggested that web-based self-directed learning can at least help maintain support from supervisors, a sense of work control and friendly workplace atmosphere, as experienced by workers^{5, 6)}. Web-based training is free from the limitations of place and time associated with face-to-face tutorials and classroom teaching, and allows learning at each trainee's pace as well as repeated learning if necessary^{5, 6)}.

Lectures and active listening practice have been incorporated in various programs^{5, 6, 9)}. Active listening training to improve supervisors' attitudes of support for their subordinates, by listening to their concerns and mental health problems, has reportedly improved the attitudes of supervisors toward their subordinates^{12,13)}. The effectiveness of a 30-hour program was demonstrated¹²⁾, and the effect of a 1-day program consisting of role playing and group discussions was subsequently demonstrated¹³⁾. Although a direct effect assessment of active listening training has not been performed, it has been demonstrated that workers under supervisors with good attitudes and listening skills have better psychological stress reactions compared with other workers¹⁾.

Training period and effect assessment period

The frequency and duration of supervisor education were reviewed. Even among education programs with multiple sessions, no program was longer than 1 yr, and the effect was followed for up to 1 yr. It was found that the effect of education on the knowledge and behavior of supervisors may be lost within approximately 6 mo¹⁵). Although supervisor participation improvement activities and supervisor continuing education carried out through the subsequent year are expected to achieve favorable results^{8, 10}), this has not been tested in a randomized controlled trial. In addition, excessive information may

decrease the educational effect¹⁸). The effect of repeated trainings performed over a certain period of time should be tested in the future, but at present, I recommend that supervisor training be performed repeatedly, yearly if possible, rather than only once. It is also preferable to plan stepwise education by dividing and spreading out the content of the education.

Evidence required in the future

Most of the current evidence has been obtained through studies that used worker self-assessments to obtain outcomes, but studies using more objective outcomes should be performed in the future. Since it has been pointed out that measures against occupational stress can take several years to be reflected in reduced medical costs and medical leave¹⁹⁾, studies on long-term effects of training should also be performed. Supervisors' acquisition of active listening skills may have a beneficial effect on the mental health of their subordinates. High-quality, specific evidence on the effect of active listening method training should be obtained.

The frequency and number of training sessions should also be examined in the future by assessing the cost-benefit of supervisor training as a mental health measure. In particular, the type of training in which personnel are gathered together in a group for training at a particular location, even for a short time, is worth examining further. Web-based training is beneficial, because it is free from the limitations of time and space associated with face-to-face tutorials and classroom teachings, and it allows learning to occur at each trainee's pace and for lessons to be repeated as needed. However, a strategy is required to improve the effect of this form of education, such as measures not only to increase the knowledge retention of trainees but also to motivate trainees to participate in the program proactively⁵).

Japanese industry has strong vertical hierarchies and a close supervisory style^{20, 21)}. These cultural and workplace characteristics may explain the accumulation of related evidence in Japan²²⁾. However, the increasing importance of management style for mental health promotion in the workplace has also been recognized in Western societies^{4, 9, 10)}, indicating that supervisor training, along with these study findings, can be applied and tested there in the near future.

Conclusion

Effective supervisor training should be planned by taking into consideration the identification of high-priority populations, planning the training with a focus on the needs and situation of individual workplaces, developing a strategy to improve the participation rate in supervisor education programs, and encouraging repetition of the training program. The content of the training should include occupational stressors as well as basic information

on workplace mental health.

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Appendix. Items required to be learned by supervisors as set out in the Japanese Guideline for Workers' Mental Health in the Workplace

Topics	Contents
1. Workplace mental health policy	Supervisors should be aware of their workplace mental health policy, which generally comprises a vision statement, a statement of the values and principles on which the policy is based, and a set of objectives.
2. Significance of positive mental health	Emphasis is placed on three significance areas of positive mental health in the workplace: securing the health and lifestyle of the employees, developing a productive and vibrant workplace/organization, and managing risk in the workplace. Supervisors are responsible for subordinates' safety as an acting employer.
3. Correct knowledge of mental health problems	Eliminating ingrained prejudices against those with mental health problems.
4. Roles of supervisors in positive mental health in the workplace	Supervisors have two important roles in relation to positive mental health in the workplace: improvements to the workplace environment and individual consultations and follow-up.
5. Improving the working environment	The working environment includes all factors that affect health, such as physical surroundings, work procedures, work hours, work patterns, and organization. Some formerly successful examples may be introduced for the improvement of stress factors in the working environment. The goal is to get supervisors to understand the importance of assessing the workplace on a daily basis from the viewpoint of stress management.
6. Becoming aware of and responding to a subordinate's mental health problems	Early awareness of developing cases and how to deal with them are explained.
7. Support for returning to work	A model support system for returning to work is illustrated, and supervisors are encouraged to establish such a system. Emphasis is placed on the importance of preventing a recurrence after job reinstatement, by exemplifying a set of careful reinstatement steps, taking into consideration the time for starting work, restrictions on working conditions, and a follow-up period with regular consultations and reports. Participation consent of the supervisor, medical staff, and the employee is emphasized.
8. Cooperation with medical professionals within and outside the workplace	How to contact and consult with medical professionals is explained.
9. Self-care recommendations	Because the supervisors themselves are exposed to occupational stress, they are provided with some self-care recommendations, including stress awareness, relaxation, and coping methods.
10. Information on medical staff within and outside the workplace	Supervisors are informed of medical institutions or liaison offices both within and outside the workplace.
11. Protection of workers' privacy	Understanding of importance of protecting workers' privacy including health-related information. The privacy policy of the workplace should be reviewed.