IMPROVEjob – Participatory intervention to improve job satisfaction of general practice teams: A model for structural and behavioural prevention in small and medium-sized enterprises – a study protocol of a cluster-randomised controlled trial

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Abstract

Background: Perceived high chronic stress is twice as high prevalent among German general practitioners (GP) and non-physician medical staff compared to the general population. The reasons are multi-factorial and include patient, practice, health-care system and societal factors, such as multi-morbidity, the diversity of populations, and innovations in medical care. Also, practice-related factors like stressful patient-staff interactions, poor process management with waiting times, and lack of leadership play a role. This publicly funded study evaluates the effectiveness of the newly developed participatory, interdisciplinary, and multimodal IMPROVEjob intervention on job satisfaction among general practice personnel. The intervention aims at structural stress prevention with regard to working conditions and behavioural stress prevention for leaders and other practice personnel.

Methods: In this cluster-randomised controlled trial, a total of 56 general practices will be assigned to either (1) participation in the IMPROVEjob intervention for nine months or (2) the waiting-list control group. The IMPROVEjob intervention consists of the following elements: three workshops, a toolbox with supplemental material, and an implementation period with regular contact to so-called IMPROVEjob facilitators. The first workshop, addressing leadership issues, is designed for physicians with leadership responsibilities only. The two subsequent workshops target all GP and non-physician personnel; they address issues regarding communication (with patients and within the team), self- and team-care as well as practice organisation. During the nine-month implementation period, practices will be contacted by IMPROVEjob facilitators to enhance motivation. Additionally, the practices will have access to the toolbox materials online. At baseline and follow-up, all participants will complete questionnaires. The primary outcome is the change in job satisfaction as measured with the respective scale of the validated German version of the Copenhagen Psychosocial Questionnaire (COPSOQ, version 2018). Secondary outcomes obtained by questionnaires and – qualitatively – by facilitators comprise psychosocial working conditions including leadership aspects, expectations regarding and experiences with the workshops, team and individual efforts, and organisational changes.

Discussion: It is hypothesised that participation in the IMPROVEjob intervention will improve job satisfaction and thus constitute a structural and behavioural prevention strategy for the promotion of psychological well-being of personnel in general practices and prospectively in other small- and medium-sized enterprises.

Trial registration: German Clinical Trials Register, DRKS00012677. Registered 16 October 2019- Retrospectively, https://www.drks.de/drks_web/navigate.donavigationId=trial.HTML&TRIAL_ID=DRKS00012677.

Contributions To The Literature

- Few studies evaluated participatory intervention strategies to improve job satisfaction in small and medium-sized enterprises.

- This study protocol describes a cluster randomized trial aiming to improve job satisfaction in general practice personal.

- The intervention aims at activating the target group.

- The study comprises behavioural and structural prevention strategies.

- Issues of leadership, communication and work organisation in practices are addressed.

Background

Poor job satisfaction is an ongoing issue across many job domains worldwide [1, 2]. Due to the shortage of physicians in primary care in many countries increased research efforts are directed on how to maintain and improve job satisfaction in this workforce [3–5]. Studies in various general practice populations in Europe and beyond showed that job satisfaction is profoundly influenced by work-related factors [5–7]. Factors that are known to decrease job satisfaction include too many working hours, administrative burdens, inadequate income, heavy workload as well as lack of time and recognition [7]. Persisting low job satisfaction is related not only to chronic stress, burnout, depression, early retirement and other indicators of physicians' health, but is also linked reduced patient outcomes [8–15]. A study by Viehmann et al. showed that physicians and non-physician personnel in general practices are twice as likely to perceive high chronic stress compared to the general population [10]. In the same population, physicians in group practices had a higher rate of burnout than those from single practices, with young, part-time working, employed female physicians showing the highest burnout rate, even when compared to group practice owners [16]. Various reasons for high strain were identified, key factors were quality of leadership, difficult patient-encounters and practice organization [10, 17, 18].

Various approaches to improve the mental wellbeing of health care workers were evaluated [19, 20]. Many approaches address individual behaviour such as stress management, meditation or training of self-care [21, 22]. However, based on the European principles of occupational health and safety, interventions should first target the work environment of individuals and address behavioural prevention thereafter [23]. A review by Montano et al. about the effectiveness of organisation-related interventions showed that health-promoting effects were achieved among employees when interventions simultaneously focused on work equipment, work processes and working conditions [24].

Having identified lack of leadership, difficult patient-encounters and practice organization as problems in German GP practices [10, 18], the IMPROVE*job* intervention was developed following a participatory approach: A research support group with general practitioners and practice assistants was repeatedly asked for input and feedback to ensure that the intervention is tailored to the needs and capacities of general practice teams. In addition, experts from the fields of general practice and family medicine, occupational and psychosomatic medicine, operations research, health promotion and epidemiology provided input to the various areas. The intervention focuses on reducing work-related psychological stress to increase job satisfaction. It consists of three workshops (i.e., a leadership workshop for

physicians with leadership responsibilities, and two workshops for the entire practice team), a toolbox and so-called IMPROVE*job* facilitators to support implementation. Learning contents for participants focus on issues relating to leadership, communication and work processes. The main aim of this cluster-randomised control trial is to investigate whether the IMPROVE*job* intervention increases job satisfaction amongst general practice personnel.

Methods/design

Study design

This cluster-randomised, controlled trial (cRCT) evaluates the effectiveness of the IMPROVE*job* intervention regarding job satisfaction (primary outcome) among practice personnel. Randomisation will take place at practice level, i.e., all personnel of a practice will be assigned either to the intervention or to the control group. The study will be conducted according to the waiting-list control principle, i.e., intervention practices will receive the IMPROVE*job* intervention after baseline data collection, control practices after completion of follow-up. For details see Figure 1.

Participants and recruitment

The study will be conducted in general practices of the North Rhine region in Germany. Urban and rural medical practices are selected to ensure a better generalisation of the results. Practices will be drawn as random samples from an official list of registered general practice physicians of the Association of Statutory Health Insurance Physicians of North Rhine (original German: *Kassenärztliche Vereinigung Nordrhein*) in these selected areas and from a list of teaching practices of regional universities. We previously showed that teaching practices are typically easier to recruit and do not differ from non-teaching practices with regard to health service characteristics [25]. We therefore aimed for an approximately equal distribution of teaching and non-teaching practices in the final sample.

The practices will be contacted by Institute of General Practice and Family Medicine of the University of Bonn. Depending on available contact details, practices will be sent invitation letters by mail, fax and/or email, each of which include participant information and an informed consent form for the practice owner. Practices will then be contacted by phone to provide additional study information. As soon as the practice owner has given written consent, a visit by a study nurse of the Center for Clinical Trials in Essen (originally German: *ZKSE, Zentrum für klinische Studien Essen*), is scheduled. During this visit, the study nurse will obtain informed consent from each participating team member, distribute and collect the baseline questionnaire data, and complete an observational occupational health and safety form. Each participant will receive 50€ after the intervention.

Inclusion and exclusion criteria

Practices will be included if at least one practice physician is registered as a GP of the Association of Statutory Health Insurance Physicians of North Rhine with or without teaching obligations. Practice

teams are eligible for participation if at least one physician with leadership responsibilities and at least one practice assistant provide informed consent for study participation. Physicians with leadership responsibilities include physician practice owners and employed practice physicians with respective duties. Our aim is to recruit all members of a practice team including employed physicians and practice assistants in training.

Exclusion criteria are a foreseeable special situation which might interfere with the completion of the study, such as practice relocation or retirement of the practice owner. Also, practices that are not primarily involved in primary care (e.g. active in psychotherapy or pain therapy) are excluded. In addition, practices that participated in the development of the IMPROVE*job* intervention or in the feasibility study of the intervention are excluded.

Randomisation

Randomisation at practice level will be performed by means of several random lists. These lists include single and group practices as well as teaching and non-teaching practices to achieve a roughly equal distribution in both the intervention and the control groups. We chose the stratification factor (a) single / group practice because structural characteristic, leadership responsibilities and indicators of psychological well-being may differ between practice types [10, 16], and (b) teaching / non-teaching practice as this factor may influence the motivation to participate in the intervention (and indirectly its effects). The randomisation list was generated by an employee of the ZKSE who was not involved in the selection of the practices.

Questionnaires and outcome measures

The primary outcome of this study is an improvement in job satisfaction. To measure job satisfaction the respective scale of the German version of the Copenhagen Psychosocial Questionnaire based on the international COPSOQ III version (German COPSOQ, version 2018) will be used (www.COPSOQ.de). The COPSOQ is a validated questionnaire that measures psychosocial factors at work [26–28]. The job satisfaction scale of this instrument consists of 6 items (B11: 1-5) and is combined with an additional global item (B11: 7 ‘how pleased are you with your job as a whole, everything taken into consideration?’). The outcome ‘job satisfaction’ was selected as the primary outcome, because the IMPROVE*job* study evaluates a complex intervention which addresses various factors known to influence the psychological well-being of practice personnel.

The following additional COPSOQ scales will be used as secondary outcomes: quantitative demands (B1: 1,3,5), emotional demands (B1: 6–7), work pace (B1: 2,4), work-privacy conflict (B2: 1–2), as well as additional items (B2: 3–4, B2:5) ’delimitation’ (B2: 6–7), predictability (B6: 1–2), role clarity (B6: 3–5), role conflicts (B6: 6–8); social support (B8: 1–4), feedback (B8: 5–6), social relations (B8: 7), sense of community (B8: 8–9), bullying (B8: 10). To calculate scale scores for each dimension, the COPSOQ will be transformed as recommended [29]. Scales will be transformed into scores ranging from 0 (minimum value, ‘do not agree at all’) to 100 points (maximum value, ‘fully agree’).

Using questionnaires the following additional aspects will be addressed: 1) leadership, 2) general health 3) work behaviour, 4) chronic s stress, 5) occupational health and safety culture, 6) stress coping strategies applied by participants, 7) work organisational issues including waiting times, team roles and team activities, and 8) team activities and roles.

1. Leadership: Leadership is assessed with items from the questionnaires on Integrative Leadership (FIF, Fragebogen zur Integrativen Führung) and Leader-Member-Exchange (LMX-7).

The FIF questionnaire [30, 31] focuses on six dimensions of transformational leadership (fostering innovation, team spirit development, performance development, individuality focus, providing a vision, being a role model), two dimensions of transactional leadership (goal setting, management-by-exception) (module a: items 1-32) [32] and on laissezfaire and destructive leadership (module d: items 65-68) [33]. All items are answered on a 5-point Likert scale. Physicians with leadership responsibilities will assess themselves, whereas other practice physicians and practice assistants will evaluate their leaders. The instrument allows for a comparison of answers provided by leaders and other personnel.

The LMX-7 measures the relationship quality between employees and supervisors (leaders) [34, 35]. It consists of 7 items with 5-point Likert scales. The LMX values are added to a sum-score. A high score reflects a positive assessment of the quality of the relationship with the supervisor. Again, practice owners will assess themselves, while employed practice physicians and practice assistants assess their leaders.

2. General health: General health is assessed using a brief burnout assessment, the World Health Organization-Five Well-Being Index (WHO-5) and the Work Ability Index (WAI).

Burnout is measured using two items from the Maslach Burnout Inventory (emotional exhaustion: ‘I feel burned out from my work’, depersonalization: ‘I have become more callous toward people since I took this job’) [36]. This brief measure of burnout was shown to provide sufficient information on the likelihood of high burnout among physicians and medical students [37, 38]. The score ranges from 0 = never to 6 = every day, the raw values are processed to obtain a score of emotional exhaustion and depersonalization which can be compared to the results obtained by the full Maslach Burnout Inventory [38].

Current mental well-being during the last 14 days is assessed using the WHO-5 (1998 version) [34, 39]. It consists of 5 items with 6-point Likert scales (5 = all of the time to 0 = at no time). The scores are added to a sum-score ranging from 0 to 25 and are then multiplied by 4 to give the final score, with 0 denoting the worst and 100 representing the best imaginable well-being [34].

Workability is measured using a single item of the WAI: ‘personal prognosis of work ability two years from now’ on a 3-point Likert scale [40, 41].

3. Work behaviour: Work behaviour is assessed using short versions of the Occupational Self-Efficacy Scale (BSW, Berufliche Selbstwirksamkeit) and the Work-related Behaviour and Experience Patterns questionnaire (AVEM-44).

Self-efficacy is measured using a short version of the BSW [42]. The instrument consists of 8 items with 6-point Likert scales.

The interplay between work, personality and health is assessed using the short version of the AVEM-44 [43–46]. The AVEM addresses three aspects which are particularly important for coping with occupational challenges. It consists of 44 items across three domains: Professional commitment (20 items across five scales: subjective importance of work; professional ambition; willingness to work to exhaustion; striving for perfection; distancing ability); coping capacity (12 items across three scales: tendency to resign in the face of failure; proactive problem-solving; inner calm and balance); subjective well-being (12 items across three scales: experience of success at work; satisfaction with life; experience of social support). Each scale consists of four items which are measured on a 5-point Likert scale. AVEM identifies four patterns which describe coping strategies for occupational stress: healthy-ambitious (pattern G), unambitious (pattern S), excessively ambitious (risk pattern A) and burnout (risk pattern B).

4. Chronic stress is measured using the German short version of the Screening Scale of the Trier Inventory for the Assessment of Chronic Stress (TICS-SSCS) [47, 48]. This instrument measures strain due to chronic stress retrospectively for three months. It consists of 12 items on 5-point Likert scales (0 = 'never' und 4 = 'very often'). The TICS-SSCS values are added to a sum-score. The score ranges from 0 to 48 with 0 denoting 'never stressed' and 48 'very often stressed', and reflects subjective strain due to chronic stress.

5. Occupational health and safety culture: Using questions from previous studies [49–52], physicians with leadership responsibilities will answer 29 items on occupational safety culture as reported by the practice owners; other staff will answer 28 items.

6. Individual stress coping strategies: in 26 items various options for stress prevention are offered, e.g. playing an instrument, hiking in nature, and support by friends. Items were derived from previous studies [10].

7. Various issues relating to work organisation will be addressed, e.g. estimated duration and peaks of waiting times for private and non-private patients, overtime due to problems with organisational workflows, reasons for waiting times.

8. Team activities and roles: The frequency of team sessions and other team activities are enquired about. Also, participants are asked to self-assess their typical personal team role from a choice of 9 options.

Socio-demographic characteristics and practice characteristics will be collected as moderating variables. Stable co-variables (e.g. socio-demographic characteristics of study participants, work-related experience and behavioural patterns (AVEM) [53], practice characteristics) will be collected only at baseline, while changeable variables will be measured at both at baseline and follow-up. At baseline, study nurses will offer an optional workplace safety sheet to be completed together with the practice leader. The sheet

addresses issues such as hygiene, emergency exits and skin protection instructions. Participation is voluntary for the leaders, a copy of the report will be provided immediately. For an overall schedule see Figure 2.

Intervention

The multimodal participatory intervention was initiated by a general practice physician and researcher (BMW). The intervention was designed by a cooperation of researchers from the fields of general practice and family medicine with those from occupational medicine, psychosomatic medicine, operations practice research and workplace health promotion. The intervention focuses on the areas leadership, work processes and work organisation, communication, occupational health and safety, and workplace health promotion. It is composed of three elements:

1. IMPROVEjob workshops:

The intervention begins with a series of three workshops each lasting four hours. The three workshops will be held within one month with two-week intervals in between. About 5-6 practices will take part in each workshop depending on the number of staff in each practice. This allows for about 8-10 physicians and 15-25 practice assistants per workshop series. All workshops include presentations by the research team as well as interactive elements with self-reflection and peer group exchanges.

The specific contents of the workshop are as follows:

1. Workshop 1 for physicians with leadership responsibilities (practice owners and employed physicians with leadership responsibilities): This executive workshop addresses the topics ‘role of the executive’, ‘leadership styles’ and ‘relational leadership competence’ including ‘transactional and transformational leadership’. The workshop includes theoretical inputs delivered via visual presentation, small group interactions as well as a skills training session. The later training is designed to allow for the training of leadership aspects in a simulated practice scenario with a simulated practice assistant: one participant is asked to take on the role of a physician leader who is facing a conflict between team members with leadership responsibilities. The workshop offers leaders the opportunity to reflect on their own leadership role and values, to increase the awareness for and impact of stress prevention for all team members, and to learn different leadership styles. In particular, different aspects of the relational, transactional and transformational leadership approaches and their effects on employees´ health and team-building are addressed.
2. Workshop 2 for physicians with leadership responsibilities and all practice employees: This workshop addresses issues relating to the communication between practice personnel and patients. Using a theoretical framework and interactive skills sessions with trained simulation patients, participants will learn how to analyse encounters with patients which they perceive as challenging and how to better communicate in such situations. Drawing on typical scenarios in primary care practices, challenging situations are trained.

3. Workshop 3 for physicians with leadership responsibilities and all practice employees: This workshop addresses issues relating to ‘work organisation including appointment scheduling’, ‘occupational health and safety’ and ‘workplace health promotion’. At the end of the workshop series, practices will be empowered and supported with implementation aids such that they are able to adjust their daily routines according to self-selected goals. Practices will be encouraged to set targets for their implementation phase.

2. *IMPROVEjob toolbox*

The toolbox includes materials presented in the workshops and supplemental material. It comprises two booklets (one for physicians with leadership responsibilities and one for practice employees), a desk calendar and a personal code allowing access to a secured web space with additional material for downloading.

- The ‘management logbook’ (for physicians with leadership responsibilities): This folder contains material of the workshops 1 to 3 plus supplements.
- The ‘employee logbook’ provides materials of the workshops 2 and 3 plus supplemental material.
- The desk calendar for practice teams presents a variety of issues from the workshops in a concise card format, e.g. advice on communication with so-called ‘difficult patients’, on occupational health and safety, and on issues of individual health promotion such as relaxation and ergonomics.
- Supplemental material for download, e.g. practice checklists and other tools, will be provided via a secured webspace. The personalised access allows for the evaluation of the webspace’s use on an individual level.

3. *IMPROVEjob facilitators*

The facilitators are trained members of the research team who will accompany the practices during the change processes by on-site meetings in the practice and/or by phone. Prior to the workshops, the facilitators will be trained in change processes, the setting of GP practices, and qualitative data collection in two training sessions. The facilitators concentrate on processes and developments within the practices, but they do not engage in active coaching. They are conceptualised as process companions who remind the practice teams of the project and support the implementation of the intervention. In addition, the facilitators will collect qualitative data in the practices to analyse for the relevance, feasibility and implementation of the intervention. The facilitators will take part in the intervention workshops where they will meet the study participants. Also, they will note down the practice goals set by each participating practice. After the workshops the facilitators will offer practices to contact them regularly, e.g. once a month, to facilitate the implementation.

Control group

This study will use a waiting-list control approach. After completion of the follow-up data collection, practices in the control group will be offered the same IMPROVE*job* workshops as practices in the

intervention group, including access to the toolbox. The project's duration and funding does not allow for IMPROVE*job* facilitators to be involved in waiting list control group.

Sample size calculation

The primary hypothesis of this study is that the IMPROVE*job* intervention will have an effect on job satisfaction among personnel working in general practices. The null and alternative hypotheses to be tested are

H_0: $\mu_I = \mu_C$

H_A: $\mu_I \neq \mu_C$,

where μ_I and μ_C denote the mean score difference between baseline and after 9 months on the COPSOQ job satisfaction scale in the intervention and in the control arm.

We aim for a power of (at least) 80% with a two-sided significance level α=0.05. The calculations will be carried out by means of a clustered t-test [54, 55], assuming an intra-cluster correlation coefficient (ICC) of 0.05 [56]. All power analyses will be made using the software PASS 13, option 'Tests for Two Means in a Cluster-Randomized Design'.

Assuming a mean value ± standard deviation for the primary endpoint of 73.6 ± 15 points [57], we calculate that a sample size of 52 clusters (26 practices per arm), each with 3 participating staff members per practice, will be sufficient to detect a change of 10% (7.3 points) with a power of 81% at the chosen significance level. With 4 participants per practice, the power will increase to 89%.

Conversely, with 52 practices and 4 participants per practice, the study would have a power of 80% to detect a change of 0.43 SD in the primary endpoint (and 0.39 SD with 5 participants per practice). This is comparable to the 'minimally important difference' (MID) of 0.4 SD proposed as a relevant change in the COPSOQ job satisfaction score in [58].

Since physicians have lower values and standard deviations than practice assistants on this scale [57, 59], the sample size calculation is rather conservative.

Assuming 2 practice drop-outs in the intervention and the control group each, we will include physicians and practice assistants from 56 general practices in the study.

Data management and statistical analyses

Data management is carried out by the ZKSE according to standardized procedures as defined in current Standard Operating Procedures (SOPs). The data management system used by the ZKSE has an integrated audit trail and is GCP-compliant. All personal data will be kept confidential in an access restricted database. All analyses will be performed using pseudonymised data. The pseudonymised data

will be stored at the ZKSE and the Institute of General Practice and Family Medicine of the University of Bonn. The latter institute will manage the access to the data set.

Regarding the primary outcome we hypothesise that the participatory IMPROVE*job* intervention will improve the job satisfaction among practice personnel. A before-and-after comparison between the intervention and the control group will be used for the evaluation. To control for response shift with respect to job satisfaction, a 'then-test' is aimed for [60]. For the statistical analysis, the COPSOQ scales will be transformed according to instrument-specific algorithms [27]. The confirmatory analysis to measure the effect of the intervention will be carried out as an intention-to-treat analysis, i.e. all participants who completed the job satisfaction scale at baseline and follow-up will be included. The primary analysis will be conducted using a linear mixed model adjusted for clustering and the randomization strata. Per protocol, the analysis will be performed with data of physicians with leadership responsibility who took part in the management workshop and in at least one of the two team workshops, as well as with data of practice assistants who took part in at least one team workshop. Additional analyses will focus on secondary outcomes as well as associations between various independent and dependent variables. All analyses will respect the cluster-randomised nature of the study design including approaches to analyse for team aspects within the practices.

Discussion

The participatory IMPROVE*job* intervention is a novel approach aimed at addressing typical work-related issues encountered in general practices. It is designed to empower teams to analyse their situation and apply self-selected strategies to modify daily work routines. In contrast to many stress-reducing intervention studies [61], our approach integrates behavioural and environmental changes.

Regarding didactics, the IMPROVE*job* study applies modern learning strategies such as interactive sessions, peer learning and skills training in leadership and patient-staff communication [62]. The latter allows for a simulation of real-life scenarios and training close to reality following concepts of an enactive mastery experience [63]. The latter was recently shown to be effective in training residents for in-house leadership [64] but has not been evaluated in leadership training for physicians with leadership responsibilities and practice assistants in the outpatient setting.

Given the high prevalence of psychological strain, sick leaves due to depression, and respective early retirements in various job domains in Germany, the German Federal Ministry of Education and Research has setup the Funding Initiative 'Healthy – for life' (original German: *Gesund – ein Leben lang*). The IMPROVE*job* study is funded within this initiative. Respecting the described societal context, the IMPROVE*job* intervention will be evaluated in general practices which are considered to be models for small- and medium-sized enterprises, yet - if proven effective - the intervention will be disseminated in other medical settings as well as evaluated for its transferability to other occupational fields.

Abbreviations

AVEM-44 = Work-related Behaviour and Experience Patterns questionnaire

BSW = Occupational Self-Efficacy Scale (Berufliche Selbstwirksamkeit)

FIF = Questionnaires on Integrative Leadership (Fragebogen zur Integrativen Führung)

GP = General practitioner

LMX-7 = Leader-Member-Exchange

TICS-SSCS = Screening Scale of the Trier Inventory for the Assessment of Chronic Stress WAI = Work Ability Index

WHO = World Health Organisation

WHO-5 = World Health Organization-Five Well-Being Index

Trial Status

This is protocol version #1 which was approved by all authors in 20.02.2019. The trial is ongoing. The recruitment of participants started in 05.09.2019. The recruitment is expected to be completed by February 2020.

Declarations

Ethical approval and consent to participate

The study complies with the ethical principles of the World Medical Association Declaration of Helsinki [65]. Ethical approval was obtained from the lead Ethics Committee of the Medical Faculty of the University of Bonn (reference number: 057/19, date of approval: 20/02/2019). All participating practice team members will receive written information and sign informed consent forms, which will be stored at the Institute for General Practice and Family Medicine, University of Bonn. In case of modifications of the protocol, relevant parties including the above mentioned ethics committee, will be informed.

Consent for publication

Not applicable.

Availability of data and materials

Not applicable.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

BMW had the study idea and drafted the first version of the manuscript together with SK and KL. All authors contributed to the study protocol and/or development of the intervention. All authors provided feedback on the manuscript and approved the final version.

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Figures

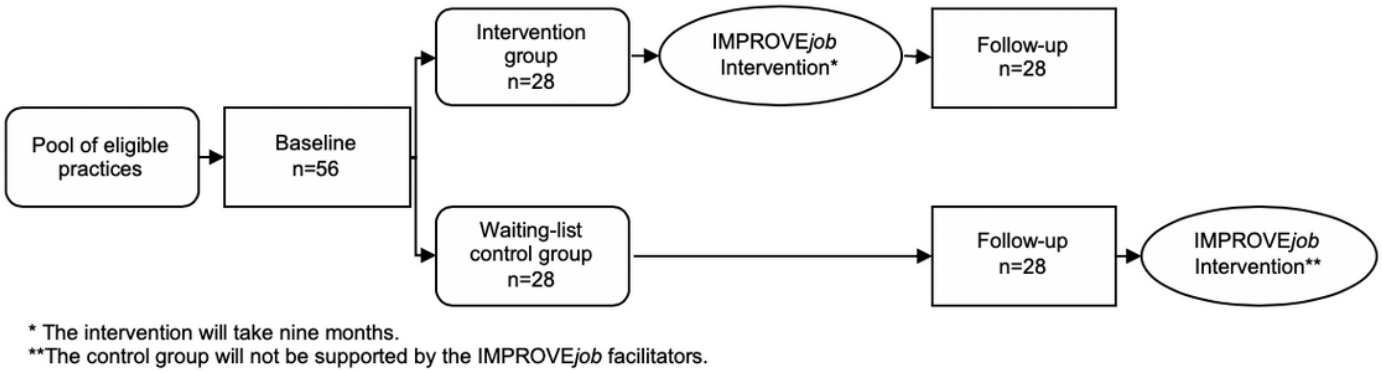

Figure 1

Study design: Cluster-randomised controlled trial with intervention practices and waiting-list control practices

				Study period												
	Enrollment	Baseline	Allocation	Treatment period			Implementation period*									Follow-up
Timepoint	$-t_2$	$-t_1$	0	Week 1	Week 3	Week 5	Week 9	Week 13	Week 17	Week 21	Week 25	Week 29	Week 33	Week 37	Week 41	t_1
ENROLMENT:																
Eligibility screen	X															
Informed consent	X															
Allocation			X													
ASSESSMENTS:																
COPSOQ		X														X
FIF		X														X
LMX-7		X														X
WHO-5		X														X
WAI		X														X
Maslach Burnout Inventory		X														X
BSW		X														X
AVEM-44		X														
TICS-SSCS		X														X
Occupational health and safety culture		X														X
Individual stress coping strategies		X														X
Work organisation		X														X
Team activities and roles		X														X
Socio-demographics		X														X
workplace safety sheet		X														X
Practice characteristics		X														X
INTERVENTION																
Workshop 1				X												
Workshop 2					X											
Workshop 3						X										
Facilitator contact							X	X	X	X	X	X	X	X	X	
Toolbox							●	—	—	—	—	—	—	—	●	

COPSOQ, Copenhagen Psychosocial Questionnaire; FIF, Integrative Leadership; LMX-7, Leader-Member-Exchange; WHO-5, Health Organization-Five Well-Being Index; WAI, Work Ability Index; BSW, Occupational Self-Efficacy Scale; AVEM-44, Work-related Behaviour and Experience Patterns questionnaire; TICS-SSCS, Trier Inventory for the Assessment of Chronic Stress
* Only for intervention group

Figure 2

Overall schedule and time commitment for trial participants within the IMPROVEjob intervention

Supplementary Files

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