



Burnout prevention team-process evaluation of an organizational health intervention

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Received: 5 August 2018 / Accepted: 6 November 2018 / Published online: 20 November 2018
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Abstract

Aim The present study focuses on the implementation and evaluation of the organizational intervention “Burnout Prevention Team” (BPT). The BPT relies on a standardized procedure and is theoretically based on the Areas of Worklife—an empirical framework of well-established work-related factors that evidently induce job burnout.

Subjects and methods To evaluate BPT, the process of intervention implementation was examined drawing on an evidence-based model of process evaluation with the focus on initiation, activities, and implementation strategies.

Results BPT was conducted in nine health care institutions. Results emphasize the relevance of ensuring management support as well as developing a sound communication and information strategy within the initiation phase. Regarding intervention activities, providing employees with knowledge about the burnout concept and trigger factors turned out to be an essential prerequisite for developing successful intervention solutions. Overall, in each institution 7 to 12 solutions to institution-specific problems were developed. Approximately 1 year after the solutions were launched at least 70% were partially or completely implemented.

Conclusion The general high implementation rate suggests that the BPT can be proposed as a successful example for an organizational-focused approach that should be highly exportable to other health care institutions.

Keywords Burnout prevention · Organizational health intervention · Qualitative process evaluation · Health care

Introduction

A state of emotional and/or mental exhaustion combined with negative attitudes toward work, doubts about one’s competencies and the value of the accomplished work is recognized as job burnout (Maslach et al. 2001). Burnout has become increasingly significant over the last decades as research has showed the

importance of this phenomenon in regard to well-being and health at work (Gascón et al. 2013; Jaworek et al. 2010). From early on, the aim of burnout research was to develop a solution to the “problem” (Maslach et al. 2012). Chronic or constant job stress is commonly understood to be the trigger factor that causes burnout (e.g., Bakker and Costa 2014). Consequently, programs that aim at preventing or reducing burnout should directly target factors that evidently induce chronic job stress. Especially structural work-related factors such as job demands, support and the possibility to exert control have been shown to influence job stress and subsequent burnout symptoms (Aronsson et al. 2017). In this line, the goal of the current study was to describe and evaluate an organizational health intervention (Burnout Prevention Team, BPT) that specifically focuses on such work-related factors of burnout symptoms in the health care sector.

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Electronic supplementary material The online version of this article (<https://doi.org/10.1007/s10389-018-0999-0>) contains supplementary material, which is available to authorized users.

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Work-related factors contributing to burnout

Several studies have clearly identified specific work-related factors that induce stress and contribute to the development of job burnout: work overload, lack of control, insufficient reward, breakdown of community, absence of fairness and value conflict

(see, e.g., Bakker and Costa 2014; Bakker and Demerouti 2017; Brom et al. 2015; Leiter and Maslach 2004; Tsutsumi and Kawakami 2004). Leiter and Maslach (1999) combined these six work-related factors in one framework: The Areas of Worklife. *Workload and Control* have already been established as key factors for health at work in early job characteristic models (e.g., Job-Demand-Control model, Karasek 1979). *Reward* comprises the power of reinforcement to shape behavior and points to the extent to which rewards (monetary, social and intrinsic) are consistent with the individual's expectations. Insufficient reward can lead to gratification crises/imbalance and stress-related health problems (e.g., the effort-reward-imbalance model; Backe et al. 2012; Siegrist et al. 2004). *Community* sums up the overall quality of social interactions at work such as issues of interpersonal conflicts, team work and social support. Social support has also been shown to buffer workload, whereas lack of support and conflicts can foster job burnout (e.g., Job-Demand-Control-Support-Model; Adriaenssens et al. 2015; Johnson and Hall 1988; Schaufeli and Buunk 2003). Literature on equity and social justice points toward the importance of the perception of *fairness* or equity as one determinant of health-related outcomes (e.g., Walster et al. 1973). Fairness describes the extent to which decisions and resource allocation at work are perceived as fair and equitable. Finally, the ideals and motivation that attract people to their jobs are described by *values*. Incongruence between job and job holder in the values dimension can impair people's engagement and lead to counterproductive behavior. Overall, an experienced weak congruence in one or more of these work-related factors can induce stress and in the long term threaten employees' well-being (Brom et al. 2015).

In particular, in the health care sector work-related factors (e.g., workload, community) have been found as important sources for chronic job stress and subsequent higher levels of burnout-related health problems (Van Bogaert et al. 2017; Khamisa et al. 2016; McHugh et al. 2011). In turn, burnout is associated with poorer quality health care and reduced safety for patients (Salyers et al. 2015) as well as an increased risk of absence from work, low work satisfaction and an increased intention to leave for employees (Hall et al. 2016). As a consequence, organizational health interventions focusing on such stress-inducing characteristics in the work environment are able to reduce long-term effects of staff burnout (Westermann et al. 2014). Therefore, health care employees, especially those who provide inpatient elderly and geriatric long-term care, were chosen as a target group for the current study as employees in this field might particularly benefit from a successful burnout prevention program.

Burnout prevention: two ways to go

In general, there are two approaches to burnout prevention: *individual-* and *organizational-focused* interventions (Ahola et al. 2017; Maricutoiu et al. 2016). Most of the burnout or

stress prevention interventions follow the *individual-focused* approach (Westermann et al. 2014). Here, the focus lies on fostering individual resources and thus strengthening both physical and psychological resiliency, e.g., through mindfulness and relaxation techniques, cognitive behavioral therapy or training (e.g., Lagerveld et al. 2012; Sharma and Rush 2014). Effects on burnout or stress symptoms can be found shortly after the intervention (short term, 6 months or less), but mostly only on the individual level (Awa et al. 2010; Lamontagne et al. 2007; Westermann et al. 2014).

Organizational-focused interventions aim at the modulation of work-related factors, e.g., task restructuring, supervision, increasing work control or the level of participation in decision making. Interventions targeting the organizational level have been reported to induce more long-term effects on burnout (≥ 12 months; Awa et al. 2010; Montano et al. 2014; Westermann et al. 2014). Thereby, the probability of significant effects on job burnout is said to be higher for interventions targeting several organizational modifications (Montano et al. 2014).

Following this assumption, the current article presents the implementation process of an *organizational-focused* burnout prevention program. Specifically, in the current study a participatory action research approach was applied, which is associated with the following advantages: First, participatory interventions facilitate an accurate problem identification and analysis and optimize the integration of the intervention outcomes into the organizational culture and structures. Likewise, empirical findings emphasize employees as active crafters and experts of their own work situation (Nielsen and Abildgaard 2013). Second, employee participation helps to improve communication and to reduce resistance to change. It may also increase responsibility for dealing with the problems identified and increase commitment to change strategies. Finally, a participatory method itself already represents an intervention as it reflects the concrete enactment of job control (Kompier and Aust 2016). Employees and (line) managers work together to design the intervention process; they cooperatively identify work-related risk factors in their organization, develop specific solutions and action plans to improve employee health and well-being, and implement and evaluate these solutions (Nielsen et al. 2010).

Process evaluation: insights into the how and why

To evaluate an organizational health intervention, two main approaches can be applied. The *outcome evaluation* is the most commonly used approach (e.g., Kirkpatrick 1998; Havermans et al. 2016). It occurs at the end of an intervention and measures the actual change in the targeted outcome (e.g., burnout). Over the last decades, several researchers have challenged the outcome evaluation approach as it neglects the complexity of factors that interplay within an organization

and the intervention process itself (e.g., Nielsen and Randall 2013; Nielsen and Abildgaard 2013; Nielsen et al. 2010).

The main focus of an organizational health intervention is on changing the work environment and procedures related to how work is organized, designed and managed. The targeted outcome (e.g., lower burnout rate, better individual health) depends on wide-ranging multifaceted activities of various organizational members instead of solely focusing on single employee's behavior (Nielsen et al. 2010). With this perspective, evaluating only the outcomes does not provide an answer to the how and why of organizational change and does not account for possible confounding events (e.g., change of management) during the intervention process. As a second approach, Nielsen and Randall (2013) recommend conducting a process evaluation by collecting data across three main themes. The central theme *intervention* (initiation, intervention activities and implementation strategies) determines the maximum level of intervention delivery reached. *Context* (e.g., high job demands, bureaucratic organizational structure, bad experience with interventions, specific events) and *mental models* (e.g., individuals' perceptions and appraisals) moderate or mediate the link between any intervention exposure and its outcomes. The aim of this approach is to explain whether and why specific organizational health interventions produce certain outcomes under particular conditions, thereby answering questions such as "Under which circumstances will an intervention work?" and "Which were the factors that hindered or stimulated the change?" (Nielsen and Randall 2013; Kompier and Aust 2016).

Hence, the current article presents the process evaluation of an organizational intervention (Burnout Prevention Team) in health care institutions thereby focusing on process variables in accordance with the central theme *intervention* of the Nielsen and Randall framework (2013) with the phases initiation, intervention activities and implementation strategy. The BPT specifically aims at evidence-based work-related factors that have been shown to facilitate impaired health outcomes and burnout (Areas of Worklife; Leiter and Maslach 1999, 2004). Key questions are: How did the initiation take place? What intervention activities could be carried out? How successful was the implementation of BPT?

Methods

Participating institutions

The organizational health intervention "Burnout Prevention Team" was conducted in nine institutions in the nursing and care field, eight nursing homes and one home for people with disabilities. Four care institutions were located in larger cities (approximately 500,000 citizens); five were situated in smaller cities or a more rural area. Most include non-profit institutions

(six nursing homes) compared with three profit institutions. Institutions ranged from small (47 beds) to large (240 beds) with most homes taking care of around 70 to 130 (elderly) people. Managements reported between 25 and 120 employees. A Burnout Prevention Team was formed in each institution. The teams included representatives of five to eight units (e.g., care wards, kitchen, cleaning) and comprised five to nine permanent team members. Overall, 58 units were represented in the nine BPTs. Due to fluctuation, sickness and maternity leave, a total of 67 employees were part of the BPTs. Most team members were female (57.8 male, 2 did not specify their gender). The average age was 41.44 years ($SD = 10.3$, range = 21 and 60 years); 56.6% of the team members worked for their institution > 5 years, 32.1% even more than 10 years. The teams comprised mostly skilled care employees (55.6%), 7.4% care assistants, 7.4% unskilled employees and 16 employees in non-nursing professions, e.g., kitchen and social work.¹ Prior to participation, all BPT members signed a written informed consent form including an explanation of the BPT process, the scientific question under investigation, voluntariness and data privacy information.

Procedure

The organizational health intervention study BPT was modeled after the principles of "health circles" (for a review, see Aust and Ducki 2004): (1) operating in small groups, (2) group members can be heterogeneous (e.g., mixed hierarchical levels), (3) clear assignment, (4) preferably 8–10 regular meetings, (5) meetings are led by an external moderator/facilitator and (6) team members as "experts" for their working situations and thus their individual knowledge as the foundation for finding solutions. It followed three distinctive phases (initiation, intervention activities, implementation strategy; for study design, see Fig. 1).

Initiation Before the organizational health intervention started, a step-wise process was chosen to identify participating nursing homes and raise awareness. First, a meeting with the management level of each nursing home was held to obtain compulsory leadership commitment. The project aims, timeline, theoretical/empirical background regarding work-related factors and burnout as well as required institutional investment were explained. Also, an information event was made to all employees to create transparency and obtain collaboration.

Second, in each nursing home a Burnout Prevention Team was formed. The team comprised one representative of each department/unit from the individual nursing home.

¹ According to § 87b SGB XI, there is an additional group of employees ("Alltagsbegleiter," trained support carers) in German elderly care institutions. Their task is to support residence in managing everyday life (e.g., play games, make music, exercises, reading) and give a sense of security and orientation.

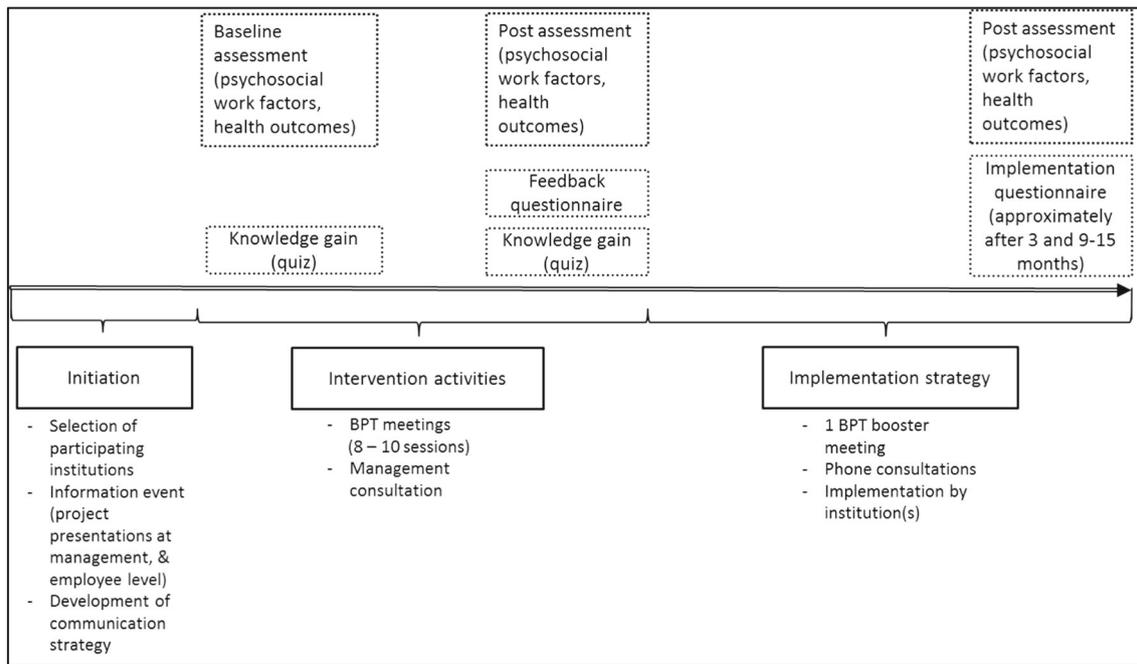


Fig. 1 Study procedure

Participants in the BPT were either elected by their department co-workers or selected by the management. Thus, BPT composition was different for each participating institution. Main criteria for team members were: willingness to become advocates for the BPT (e.g., share acquired knowledge, mobilize and consult co-workers) and sound knowledge of their department unit. Participation was voluntary. Every team member was encouraged to share their duty with one substitute who could participate in case of absence (e.g., due to sickness or vacation). Nursing management agreed to accredit time spent in BPT meetings as working or training time (with pay). Alongside the BPT meetings, a management consultation was conducted. Focusing on workplace health promotion, management was informed about health management in general (on an individual and organizational level) and more specifically about the BPT process and possible outcomes. As part of the communication strategy, it was decided to keep all employees informed during the entire intervention process. Therefore, the content and results of the BPT meetings were recorded in a standardized way and distributed by the BPT members within regular staff meetings.

Intervention activities At the beginning of this phase, a baseline assessment was conducted to evaluate pre-intervention work-related factors and tailor intervention activities to the problems perceived by organizational members. Direct workplace observations as well as subjective quantitative measures were applied. Researchers presented baseline results and interpretation to employees and management. Critical work-related factors as well as health outcomes were highlighted and pointed out. To nursing homes with adverse work-

related factors above average and high burnout ratings, the organizational health intervention BPT was particularly recommended.

Then, BPT meetings started. In total, eight to nine 90-min meetings were held on a regular basis (e.g., weekly, every fortnight) in close cooperation with the nursing home management and team members. During all meetings, the BPT was accompanied by two researchers (moderator, assistant). Thereby, the BPT followed a standardized structure (see Table 1) separated into two sections: (A) knowledge transfer and (B) development of intervention activities. (A) In the section *knowledge transfer* (sessions one to four), the facilitator provided theoretical and empirical knowledge about the concept of burnout and the six relevant work-related factors for burnout development (see above workload, control, reward, community, fairness, values and areas of worklife; Leiter and Maslach 1999). The aim of this section was to raise awareness and foster understanding about the concept of burnout and its relationship to work-related factors, in addition to building confidence that change is possible, and finally create a participatory, positive team climate. Different facilitating techniques were used: presentation, metaplan/creativity techniques, group discussions and case studies. Session four (add-on) was conducted to provide additional information for the individual team member to change dysfunctional/harmful individual behavior to prevent burnout.

(B) During the section *Development of intervention activities* (sessions five to eight/nine), knowledge imparted in the first section was applied together with participants' expertise in their own work situation. Here, BPT meetings focused on identifying problematic work conditions and

Table 1 Process of a BPT intervention to prevent burnout

Topic	Content	Aim	Section	Session
<i>What is burnout?</i>	<ul style="list-style-type: none"> • Introduction to the aim of the intervention, • burnout as a risk factor for health problems (definition, causes, consequences), • emphasizing relevance of organizational environment as a risk factor for burnout 	Raising awareness, creating a confidential and trusting environment	<i>Phase 2: (A) training</i>	Session 1
<i>Work-related factors and burnout</i>	<ul style="list-style-type: none"> • Six evidence-based work-related factors (definition, theory, application and discussion) —workload, decision latitude, social support, reward, fairness, values 	Raising awareness, impart background knowledge about psychosocial factors and health, create a participatory climate	<i>Phase 2: (A) training</i>	Session 2–3
<i>Individual factors and burnout</i>	<ul style="list-style-type: none"> • Individual factors for burnout and health problems (definition, theory, application and discussion) —emotion-regulation/handling stress, work-family conflict, presentism 	Present and point toward individual factors that influence burnout and encourage behavior change, building trust	<i>Phase 2: (A) training</i>	Session 4
<i>Improving work-related factors</i>	<ul style="list-style-type: none"> • Introduction to health circle (aim, process) • Health circle process (5 steps) 1. Identify the most adverse work-related factor(s) 2. Gather all problems regarding the specific work-related factor (brainstorming, clustering, no evaluation) 3. Identify the most adverse/important problem cluster 4. Analyze problem cluster according to the problem analysis scheme (Seifert 1992; problem specification, identifying causes, generate solutions, discussion possible hindrances) [repeat step 4 with all relevant problem clusters] 1. Gather and discuss all generated solutions for the specific work-related factor [repeat steps 2–5 for other relevant work factor] 2. Identify the most important and effective solutions 3. Develop an action plan containing consensus solutions [solution, responsibility (who), timeline] (including management) 	Analyze psychosocial work problems and develop possible solutions, change of focus From problem oriented to solution oriented	<i>Phase 2: (B) application</i>	Sessions 5, 6, 7, 8/9
<i>Implementation</i>	<ul style="list-style-type: none"> • Presentation of solutions and explanation to all employees • Evaluation session (3 months after action plan is established) —assess implementation status —discuss and explain consequences of change management —address obstacles and discuss solutions 	Transparency, commitment, overcoming obstacles	<i>Phase 3: Implementation</i>	Follow-up

developing possible solutions to improve these situations following a structured health circle approach (Aust and Ducki 2004; see Table 1). First (session five), out of the six theory-based work-related factors, BPT members identified the most problematic factor for their institution (based on the results of the baseline assessment scores provided by the researcher, individual profiles as well as information from their department). After identifying the most adverse or problematic factor, the problem-analyzing process started (session six). Beginning with the most adverse factor, BPT members were asked to name all problematic situations regarding to this specific work-related factor. Importantly, in accordance with the brainstorming technique, all mentioned problems were first collected, explained and clustered without evaluation by the other team members. In session seven, the problem clusters were discussed, rated and prioritized in accordance with strain

and adversity. Then (session eight), the analysis of the problems started for all problem clusters following the problem analysis scheme (Seifert 1992).

Specifically, four questions were answered: How does the problem manifest? What could be the underlying source or cause? What can be done about it? What could hinder implementation of the solution? The questions were discussed in subgroups of two to four team members, who worked at either the same or different problem clusters (extensive vs. narrow topic). Finally, all developed solutions regarding the specific work-related factor were gathered, clustered, combined and discussed. For the second problematic work-related factor, the problem-analyzing process was repeated. Process was adapted in each institution as time spent on each problem cluster or work-related factor was dependent on the BPTs. All generated solutions were assembled, and the BPT decided

on the solutions that should be proposed to the management. Rating was dependent on practicability, considered importance and impact, as well as employees' preferences. Recommended solutions were proposed to and discussed with the management level. Consensus was reached and an action plan developed containing the approved solutions, clear task responsibilities and time period for implementation.

Directly after the last BPT meeting, employees were asked questions about their knowledge of the BPT and to give feedback on the procedure and content of the BPT. In line with the baseline assessment (Fig. 1), subjective measures regarding work-related factors and burnout were assessed.

Implementation strategy This phase of the organization health intervention focused on implementing previous developed intervention activities. To create transparency and obtain commitment for implementation, at the beginning BPT member(s) presented and explained the generated solutions to all employees during a staff meeting. About 3 months after the action plan was established, a BPT booster session was held that focused on assessing the implementation status of the generated solution(s) and offering support for possible hindrances. As implementation of solutions leads to modifications in the working environment, consequences and frequent reactions to changes were discussed and explained (change management principles). A final follow-up assessment was held about 3 and 9–15 months after the action plan was agreed upon to rate the implementation and importance of generated solutions as well as to assess work-related factors and health outcomes.

Materials

Work-related factors, burnout and mental health were measured using established questionnaires at baseline (phase *intervention activities*) and post-intervention in the last BPT meeting and after 9–15 months (phase *implementation strategy*). The German translation of the *Areas of Worklife Scale* (Leiter and Maslach 1999; German version: Brom et al. 2015) was applied. The scale comprises six theory-based dimensions: workload (6 items), control (3 items), reward (4 items), community (5 items), fairness (6 items) and values (5 items). Each subscale includes positively and negatively worded items. Subjects give their response on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). Negatively worded items were inverted. A high score (above the cutoff value of 3) indicates a high degree of perceived alignment between the working conditions and the respondent's preference (i.e., a good fit). The *Maslach Burnout Inventory-General Survey* (MBI-GS; Schaufeli 1996) was used to assess burnout in three subscales: emotional exhaustion (5 items), cynicism (5 items) and professional efficacy (6 items). All items are scored on a 6-point

frequency rating scale (1 = never to 6 = very often). High values on exhaustion and cynicism and low values on professional efficacy are indicators for burnout. In addition, well-being was measured with the validated *Well-being-Index* (WHO 5; Brähler et al. 2007). The index consists of five items that were answered on a 6-point frequency rating scale (0 = at no time to 5 = all of the time). Ratings are summarized to form a range from 0 to 25. High scores indicate distinctive well-being. A score below 13 is interpreted as poor well-being.

To document *knowledge gain* of BPT members, 15 multiple choice questions about the concept of burnout as well as its relation to work-related and individual factors were assessed at the first and last BPT meeting (quiz). Each question contained a set of options with one or more correct answers. Sample items are "Emotional exhaustion describes (a) a feeling of facing excessive demands, (b) frustration, (c) lack of energy and (d) reduced feelings of work-related personal accomplishment and "The work characteristic 'workload' refers to: (a) quantity of work tasks, (b) degree of urgency to accomplish work tasks, (c) order of work tasks and (d) complexity of work tasks." At the end, a sum score of the current knowledge level is computed by adding up the number of all correct multiple choice questions.

Furthermore, a *feedback questionnaire* was assessed directly at the end of the organizational health intervention to measure acceptance of the procedure and content of the BPT. Specifically, participants in the BPTs ($n = 67$) answered questions regarding their satisfaction with the meeting content, applied methods, group process, institutional support and integration into the daily work activities on a 5-point Likert scale (1 = "do not agree at all," 2 = "do not agree somewhat," 3 = "partially," 4 = "agree somewhat," 5 = "agree completely"). Finally, approximately 3 and 9–15 months after the last BPT meeting, an *implementation questionnaire* was applied to assess information about the communication strategy: in the following way, I got information about activities of the BPT (multiple answers possible: "himself a member BPT," "protocols of the BPT," "result poster of the BPT," "weekly team meeting," "info event to start BPT," "I talked to members of the BPT about the content," "I did not receive any information") and implementation status (scale: 1 = "completely," 2 = "partially," 3 = "in preparation," 4 = "not started") and rated the importance of the generated solutions (5-point Likert scale: 1 = "not at all important," 3 = "undecided," 5 = "very important").

The present study focuses on the implementation and process evaluation of the BPT. Pre-post comparisons of assessed work-related factors and burnout can be found in a second article presenting the results of the BPT outcome evaluation (Buruck et al. 2015).

Data analysis

All statistical analyses were conducted using the IBM SPSS statistics package (versions 23.0 and 25.0). First, descriptive parameters were calculated (means, standard deviations and frequency in %) to outline the baseline indicators of work-related factors, burnout and mental health (baseline assessment)ⁱⁱ in addition to levels of knowledge before and after the BPT (quiz), acceptance with the procedure and content of the BPT (feedback questionnaire) as well as the implementation status and rated importance of the generated solutions (implementation questionnaire).

To investigate knowledge gains (pre-post comparison of the quiz) and differences in the implementation rate and importance from post-assessment to follow-up, paired *t* tests were conducted, respectively. Furthermore, for comparisons between different types of institutions (profit versus non-profit and small vs. large institutions), independent *t* tests were also calculated with baseline indicators of work-related factors.

Finally, we used Pearson's correlation coefficient for analyzing the relationship between implementation status and the rated importance of the generated solutions at post-assessment and follow-up after 9–15 months and the relationship between the planned time frame for solution implementation (as defined in the action plan) and implementation status.

Results

Initiation

The research team took the first initiative for the BPT intervention project. Next, a first compulsory meeting with the management level in addition to an information event with management and employees was conducted. Results of the *feedback questionnaire* show that management was rated very supportive regarding the realization of the intervention ($M = 4.52$, $SD = 0.76$).

Concerning the communication strategy formulated in the initial phase, in the *implementation questionnaire* 78.4% of the employees ($N = 156$) reported that they were informed about the BPT process and results by diverse written and oral means of communication (27.7% by standardized records of BPT meetings, 26.3% by discussions with BPT members, 24.4% during regular staff meetings).

Intervention activities

At the baseline assessment, BPT members² rated the fit in all work-related factors, besides the workload, above the cutoff value of 3. *Workload* received the lowest score ($M = 2.95$,

² $N = 67$, 14 participants did not complete the pre-assessment questionnaire.

$SD = 0.67$) followed by *Control* ($M = 3.09$, $SD = 0.78$), *Social support* ($M = 3.25$, $SD = 0.71$) and *Fairness* and *Reward* ($M = 3.37$, $SD = 0.51$; $M = 3.38$, $SD = 0.68$). The subscale *Values* showed the highest score ($M = 3.70$, $SD = 0.60$). These results are consistent with the qualitative ratings at the starting point of the BPT problem analysis (session 5): In eight of nine institutions, BPTs identified *Workload* as one of the most adverse factors, i.e., the factor with the highest risk of mismatch between employees and workplace. Five institutions worked on the factor *Reward*. Two BPTs aimed to generate solutions for problems in the area of *Social Support*. *Fairness* and *Values* were each chosen in one institution. *Control* was not directly identified as the starting point for the problem analyses. In relation to burnout, BPT members reported medium emotional exhaustion ($M = 3.34$, $SD = 1.13$), low cynicism ($M = 2.04$, $SD = 1.02$) and high efficacy ($M = 4.90$, $SD = 0.56$). Well-being was with 14.49 (5.19) above the critical point of 13.

BPT members participated in 6.4 of 8 meetings ($SD = 1.41$) on average.³ However, in the *feedback questionnaire* not all participants reported that participation was voluntary ($M = 3.57$, $SD = 1.53$). Furthermore, BPT members strongly agreed that all important problematic issues were raised during the meetings ($M = 4.20$, $SD = 0.76$), that their proposals were welcomed ($M = 4.69$, $SD = 0.52$) and that the generated acceptance was important to them ($M = 4.39$, $SD = 0.72$). The integration into the daily work activities was only partially confirmed ($M = 3.82$, $SD = 1.00$). General satisfaction with the BPT was high ($M = 4.19$, $SD = 0.73$).

In addition, BPT members reported *knowledge gains* ($M = 3.92$, $SD = 0.95$), confirmed by pre-post comparison of the quiz [$t(34) = -4.02$, $p < 0.001$, $d = 0.80$]. Participants agreed that they will continue to engage themselves in the topic of working conditions and health ($M = 4.09$, $SD = 0.82$) and that they felt confident in applying the gained knowledge ($M = 4.00$, $SD = 0.74$).

Implementation strategy In total, BPTs developed a wide range of solutions (see Appendix in online-only data supplement, Table A.1). At the end of the BPT and management meeting, action plans contained 7 to 12 solutions per institution. Most solutions were aimed to be implemented within the next 3 to 6 months. In line with this planning, at post-assessment (approximately 3 months after the action plan was approved), most of the solutions were started (in preparation, partially implemented, completely implemented; see Table 2). However, no institution had completely implemented all of the generated short-term solutions. Some solutions were already cancelled in the first 3 to 6 months (see Appendix in online-only data supplement, Table A.1, e.g.,

³ Forty-nine BPT members answered questions on the feedback questionnaire; four participants, who attended < 50% of the BPT sessions, were excluded from the analyses.

Table 2 Number of developed solutions and amount of rated importance and implementation status at post- and follow-up assessment as a function of institution

BPT	Solutions ^a	Post-assessment		Perceived influence on performance (in %) ^d	Follow-up assessm. Implementation status ^e
		Ranked importance ^{b, c}	Implementation status ^c		
1	9 Short term: 7 Long term: 2	Mean: 4.22 (0.82) Range: 3.25–4.50	Completely: 0 Partially: 6 In preparation: 2	Mean: 51.67 (7.64) Range: 45–60	Completely: 2 Partially: 5 In preparation: 0
2	7 Short term: 4 Long term: 3	–	Completely: 0 Partially: 4 In preparation: 0	–	Completely: 2 Partially: 4 In preparation: 0
3	10 Short term: 10 Long term: 0	Mean: 4.06 (0.51) Range: 3.69–4.79	Completely: 4 Partially: 5 In preparation: 0	Mean: 27.27 (24.94) Range: 0–80	–
4	12 Short term: 10 Long term: 2	Mean: 4.16 (0.46) Range: 3.22–4.67	Completely: 1 Partially: 8 in preparation: 2	Mean: 49.50 (19.78) Range: 10–80	Completely: 5 Partially: 7 In preparation: 0
5	11 Short term: 9 Long term: 2	Mean: 4.47 (0.24) Range: 3.33–5.00	Completely: 0 Partially: 7 In preparation: 3	Mean: 41.67 (26.39) Range: 10–80	Completely: 0 Partially: 8 In preparation: 3
6	10 Short term: 10 Long term: 0	Mean: 4.00 (0.42) Range: 3.50–4.71	Completely: 4 Partially: 1 In preparation: 4	Mean: 27.50 (19.37) Range: 10–50	Completely: 3 Partially: 6 In preparation: 0
7	10 Short term: 7 Long term: 3	Mean: 4.04 (0.45) Range: 3.25–4.64	Completely: 2 Partially: 3 In preparation: 4	Mean: 49.55 (29.02) Range: 0–100	Completely: 4 Partially: 3 In preparation: 1
8	7 Short term: 7 Long term: 0	Mean: 4.39 (0.52) Range: 3.60–5.00	Completely: 3 Partially: 4 In preparation: 0	Mean: 41.25 (31.25) Range: 5–80	Completely: 4 Partially: 3 In preparation: 0
9	12 Short term: 7 Long term: 5	Mean: 3.79 (0.41) Range: 3.00–4.71	Completely: 1 Partially: 8 In preparation: 1	Mean: 60.00 (42.43) Range: 30–90	Completely: 4 Partially: 7 In preparation: 0

Note. ^a Planned time frame in action plan to adopt the solution: short term: within 3 months. Long term: more than 6 months; ^b 5-point Likert scale (1 = “not at all important,” 3 = “undecided,” 5 = “very important”). ^c Number of questionnaires = 6–15; ^d number of questionnaires = 2–11; ^e number of questionnaires = 5–26

6.2.2. Develop proposal to ensure a third worker in night shift). Only institution eight had started implementing all of the solutions. Overall, importance of the developed solutions was mostly rated high, always above the scale mean of three (see Appendix in online-only data supplement, Table A.1). Rated importance significantly correlated with implementation status ($r = 0.27$, $p < 0.05$). In sum, all institutions were still in the implementation process 3 to 6 months after the action plan was formed (see Table 2). At follow-up assessment (approximately 1 year after the action plan was approved), in all institutions at least 70.00% of the generated solutions were partially or completely implemented. Five of the nine institutions had not started or canceled at least one of the generated solutions. Overall, the implementation status on the level of the institutions as well as the generated solutions was significantly higher at follow-up compared with the immediate post-assessment ($t(7) = -4.25$, $p = 0.004$, $d = 1.14$, $t(70) = -3.69$, $p = 0.000$, $d = 0.43$). Rated importance of the solution did not correlate with implementation status of the solution at follow-up ($r = 0.08$, $p = 0.52$). In contrast, the planned time

frame for solution implementation (as defined in the action plan) correlated with implementation status of the generated solutions, $r = -0.23$, $p = 0.039$. The more time institutions planned for implementing the generated solutions from the start, the less action was taken at the end.

Table A.1 lists all developed solutions, their respective importance and rated implementation status at post- and follow-up assessment.

Discussion

The present paper reported the process evaluation of an organizational health intervention, the “Burnout Prevention Team,” in nine health care institutions. Importantly, the BPT built upon a sound framework of burnout research: The Areas of Worklife (Leiter and Maslach 1999). The main aim of describing the content and procedure of the BPT was to gain insights into process factors that provide important information on the effectiveness of the organizational health intervention.

Initiation

The research team played an active role in initiating the organizational health intervention, in particular by communicating the importance of the BPT program. In the initial phase, it was therefore essential to ensure organizational awareness and commitment of management (e.g., to accredit time spent in BPT meetings as paid working or training time) as well as employees. Regarding the management level, the first preparatory meeting, the management consultation in addition to the involvement of the management in the last BPT meeting (where the final action plan was determined; see “Procedure” section) proved to be important elements for the development as well as implementation of the wide range of generated solutions at the end of the intervention process. In this line, employees perceived management as very supportive for the realization of the BPT.

Similar to established participatory intervention approaches (e.g., Nielsen and Abildgaard 2013), the communication and information strategy was also shown to be another crucial prerequisite for intervention outcomes. Specifically, the initial information event about the aims, timeline and BPT rationale, and the standardized records of each BPT meeting as well as the use of regular staff meetings as existing information channels, ensured that the majority of all health care staff had access to the BPT process and results. Such a combination of multiple communication means may also facilitate the transfer of intervention results into daily work practices.

Intervention activities

The baseline assessment of work-related factors highlighted the problems perceived by health care staff. In line with several state-of-the-art models on work-related factors and burnout (e.g., Areas of Worklife; Job-Demands-Resources Model; Bakker and Demerouti), workload was found to be the factor with the highest risk of mismatch between employees and workplace. It was also chosen as a starting point in the problem-analyzing process in almost all institutions (eight out of nine). Furthermore, BPTs identified the workload, reward and social support as the most important problems where solutions should be obtained. Subsequently, intervention activities were tailored accordingly (see Table 1). Altogether, these findings support the Areas of Worklife (Leiter and Maslach 1999) as a suitable theoretical framework for a burnout prevention intervention.

Furthermore, participants in the BPT significantly increased their knowledge about work-related risk factors contributing to burnout (measured by a quiz). Since the BPT was based on a participatory method as generally recommended in major approaches to organizational interventions (Nielsen and Abildgaard 2013), training employees in basic terms of the burnout concept and trigger factors turned out to be a crucial

first step before developing successful intervention outcomes. Knowledge transfer empowers employees to generate design solutions for identified work problems and to take part in the overall intervention process (instead of only having influence over parts; see Aust et al. 2010). In this line, the majority of participants reported being confident about applying the gained knowledge and being satisfied with the BPT intervention.

Implementation strategy

According to the implementation results, BPT members strongly agreed that they could address all of their and/or their departments’ problems during the BPT meetings and rated the importance of the generated solution as high to very high. Three to 6 months after the last BPT meeting was held, all institutions have started to implement most of the generated solutions. However, most of the solutions—even though planned for short-term application—were not completely implemented at post-assessment. This suggests that the management must be given enough time for communication of the action plan and implementation of change in the institution. So far, most organizational-focused interventions aimed primarily at the self-reported change in working conditions and often neglected to assess the degree of change or implementation that was actually induced by the generated solutions (e.g., Bourbonnais et al. 2006b; Le Blanc et al. 2007; Leiter et al. 2011). Thus, particularly in health promotion intervention programs, change is induced by combining several distinct actions and consequently must be monitored, reported and considered when drawing conclusions regarding intervention effectiveness (also see the recommendations of Nielsen and Abildgaard 2013).

Here lies the strength of our study as we assessed the implementation status of each individual solution over 1 year. Importantly, we were able to show that at post-assessment the rated importance of the generated solution influenced the start and completion of the implementation process. This could well be seen as a measure of implementation motivation. The chosen monitoring procedure helps to control results for non-specific effects not causally related to the intervention itself (e.g., Hawthorne effect; see McCambridge et al. 2014). To our knowledge, the present research is one of few that specifically examined and reported the degree of implementation of each generated solution (see Table A2). The strength of the BPT is supported by the fact that 1 year after the action plan was decided, at least 70% of the generated solutions were partially or completely implemented in each institution. In their review on health circles, Aust and Ducki (2004) found implementation rates between 45% and 86%. The change in work-related factors, for example, through, e.g., task restructuring, supervision, increasing work control or the level of participation in decision

making, takes time to reach its full effect as all employees have to be reached, acceptance created, and behavior changed and applied continually.

Limitations

Several limitations of this study must be mentioned. First, in their feedback sheet not all BPT members stated that participation was voluntary. Thus, the motivational process as well as the knowledge transfer could be minimized by these BPT members. Nevertheless, we found evidence for an overall knowledge gain, and many BPT members wanted to engage themselves further in the topic of burnout prevention (stated in the evaluation process as well as in the action plan). This underlines the importance of explicitly emphasizing the significance of voluntary participation early in the intervention process. Second, some solutions were already cancelled at post-assessment (e.g., 6.2.2. Develop proposal to ensure a third worker in night shift). This was also found in other studies, such as those by Bourbonnais et al. (2006a, b). In our study, the reasons can be referred to the influence of context factors (Nielsen and Randall 2013): The composition of team members changed in all institutions; in four institutions, the nurses described change in work-related tasks and in three institutions in working time; change in management was reported in one nursing home. Thus, we see the main reason for an unsuccessful implementation of organizational interventions in the lack of stability of the organizations. This is caused by frequently changing personnel and high turnover. Therein, we see the real cause for the limited evidence in organizational-focused interventions. Future studies should be complemented by standardized measures of context factors as well as mental models following the recommendations of Nielsen and Randall (2013).

In addition, there are also some methodological issues concerning our study design. As one empirical standard is voluntary participation, selection bias may occur regarding the participating institutions, participation of the BPT members as well as the assessment. Moreover, we mainly used self-reported data as for the process evaluation observer-based data were not available. However, as we focused primarily on the implementation status of the generated solutions, selection as well as self-report bias should not influence our results too heavily. However, further studies should include objective measures and objectively observe the implementation status of the solutions. Furthermore, a larger sample size would be desirable to apply more appropriate statistical methods (e.g., multi-level analysis) to analyze how differences between types of institutions (profit versus non-profit or small vs. large institutions) influence baseline assessment as well as implementation results. Finally, the BPT approach is mainly based on work-related risk factors contributing to the development

of burnout. In line with more positive resource-oriented approaches, a future organizational health intervention should be enriched by the assessment and development of available work-related resources (Cox et al. 2009).

Conclusion and relevance

The reported implementation and process evaluation of the organizational health intervention “Burnout Prevention Team” can be used by organizations, human resource management and occupational health professionals who wish to improve employee health and well-being by changing the way work is organized, designed and managed (Nielsen and Miraglia 2017). Thus, this article focuses on process variables in accordance with the central theme intervention of the Nielsen and Randall framework (2013) with the phases initiation, intervention activities and implementation strategy.

According to our results, the following recommendations for organizational health interventions can be derived: As a participatory intervention, the BPT approach fosters participants’ ability to craft their work-related factors. A high importance and implementation rate of the created solutions is most likely due to this participatory approach as nurses are able to propose their own solutions for improvement and justify them to their co-workers. In line with Aust et al. (2010), we further found that the following conditions must be met for a successful implementation process of the BPT: a clear mandate of the BPT, support on the management level, a sound information and communication strategy, transfer of basic knowledge to participants as well as long-term implementation phases lasting up to 18 months including a refresher or booster session.

Regarding organizational stress intervention research, the present article emphasizes the importance of conducting a process evaluation as “an add-on” to—and not a substitute for—effect evaluation (Nielsen and Randall 2013). Only measuring effects without taking the implementation into account may lead to erroneous conclusions. We thereby risk discarding potentially powerful intervention concepts without having tested them properly. The “does it work?” question is a simplification. More informative questions are “under which circumstances will this intervention work?” and “what are hindering and stimulating factors?” Therefore, in addition to the intervention design itself, a process evaluation must be planned right from the very beginning. The results from Havermans et al. (2016) can be interpreted as a plea for the integration of the process evaluation in all studies of organizational stress interventions in a way that enables the relation of process aspects to outcomes.

Overall, our results point toward the effectiveness of participatory health interventions that not only target specific issues of work design, but also promote a “rethinking” of how health issues are approached on an organizational level.

Interventions that succeed in improving work-related factors are likely characterized by a high degree of structure and a high level of employee involvement (Nielsen et al. 2010), as exemplified by the German health circle approach and the BPT presented in this article. Especially the BPT program can be proposed as a good and effective example for a tailored approach that considers the organizational conditions and challenges of transferring intervention results into the daily work practices of each institution.

Acknowledgements Heartfelt thanks to all participants in the study, whose enthusiasm continues to inspire us.

Compliance with ethical standards

The study was funded by the Gesundheitskasse für Sachsen und Thüringen (AOK Plus, Prof. Richter) and was partly supported by the Berufsgenossenschaft für Gesundheitsdienst und Wohlfahrtspflege (BGW Dresden). All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Informed consent Informed consent was obtained from all individual participants included in the study.

Conflict of interest Gabriele Buruck declares that she has no conflict of interest. Anne Tomaschek declares that he has no conflict of interest. Sarah Lütke-Lanfer declares that he has no conflict of interest.

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