

Digital Appendix Systematic Cochrane Review and Meta-Analysis on Psychological Interventions to Foster Resilience in Healthcare Professionals

Appendix D6 Detailed Characteristics of Included Studies

Table D6.1

Alexander 2015

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power & sample size calculation, level of power achieved): target recruitment and enrolment was 50 participants, with 25 in each group. This recruitment goal allowed for 10% attrition, with the expectation that 40 participants would complete the study; assumption based on a power analysis in G*Power, which indicated that for a repeated measures ANOVA with interaction effects, a minimum sample of 40 was needed to find significance with a moderate effect size (Cohen's $f = 0.25$), $\alpha = 0.05$, power = 0.80, and an estimated correlation among repeated measures of 0.40</p> <p>Imputation of missing data: not applicable since all participants remained in the study</p>
Participants	<p>Country: USA</p> <p>Setting: urban (560-bed) teaching hospital as host of yoga research study</p> <p>Age: mean = 46.38 (SD = 10.23) years</p> <p>Sample size (randomized): 40</p> <p>Sex: 39 women, 1 man</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: in Maslach Burnout Inventory (MBI): burnout, emotional exhaustion: IG = 17.60 (10.36), CG = 20.40 (13.19); burnout, depersonalization: IG = 4.05 (5.09), CG = 4.35 (3.83); burnout, personal accomplishment: IG = 37.15 (8.53), CG = 36.10 (9.93)</p> <p>Population description: nurses within partner hospital system</p> <p>Included criteria: 1) being a nurse within the partner hospital system; 2) no prior experience with yoga practice; 3) willingness to complete 8 weekly sessions and homework exercises; 4) willingness to be randomly assigned to IG or CG</p> <p>Excluded criteria: 1) serious illness or major orthopedic diagnoses of the neck, back, pelvis, or lower extremities that could interfere with completion of the yoga intervention protocol</p> <p>Attrition (withdrawals and exclusions): information received from authors (Alexander, 2019): all participants remained in the study</p> <p>Reasons for missing data: not relevant</p>
Interventions	<p>Intervention: yoga intervention (supervised yoga instruction) ($n = 20$)</p> <ul style="list-style-type: none"> <i>delivery</i>: face-to-face; probably group setting; handouts for each session to provide further information and a visual reminder of the exercises (basis for cultivating home practice) <i>providers</i>: experienced yoga instructor, (osteopathic physician in the local community), who has provided health promotion services and yoga instruction in the Kundalini tradition through a wellness-based community practice for more than 27 years <i>duration of treatment period and timing</i>: 8 weeks; homework exercises <i>description</i>: <ul style="list-style-type: none"> EMPHASIS: to provide participants with self-care tools to manage and reduce stress; one tool = enhanced self-awareness, helping individuals become more aware of the simple, unconscious, daily activities, and functions that have a cumulative impact on health and well-being. Throughout the day, most individuals' awareness is

Category	Extracted data
	<p>focused on activities outside the body while little attention is given to internal sensations and thoughts. Consequently, most bodily functions, such as breathing, are done unconsciously. Conscious awareness of the way in which one sits, stands, breathes, and thinks is crucial to improving the response to mental and physical stress. By teaching individuals how to observe themselves, many bodily and mental functions improve without strenuous or time-consuming exercise or activities.</p> <ul style="list-style-type: none"> ○ EARLY YOGA SESSIONS: participants learn to become conscious of their breathing; breathing = both a conscious and unconscious process and therefore gives conscious access to the autonomic nervous system. Inhalation stimulates the sympathetic nervous system, while exhalation stimulates the parasympathetic nervous system. When one inhales, heart rate increases and when one exhales, heart rate decreases. Practicing mindful breathing allows individuals to calm the body and mind immediately, thereby decreasing stress or energizing the nervous system if one feels fatigued or depressed. ○ THROUGHOUT INTERVENTION: participants are taught the basics of postural alignment, deep breathing, and monitoring the mind with simple meditations. Each session concludes with deep relaxation. As the series progress, additional exercises, breathing practices, and meditations are added to expose participants to the wide range of movements that can work not only the skeletal muscles but also other body systems such as the internal organs, nervous system, circulation, and emotions. <ul style="list-style-type: none"> • <i>compliance</i>: not specified • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>: yoga <p>Control: treatment as usual (not further specified) ($n = 20$)</p>
Outcomes	<p>Outcomes collected and reported:</p> <ul style="list-style-type: none"> • health-promoting behaviors - Health Promoting Lifestyle Profile II • mindfulness - Freiburg Mindfulness Inventory • burnout, emotional exhaustion - MBI • burnout, depersonalization - MBI • burnout, personal accomplishment - MBI <p>Time points measured and reported: 1) pre-intervention; 2) postintervention</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: We contacted authors to get the information about potential attrition and missing data in the study as well as the number of participants analyzed for the outcomes reported in Table 3 (Alexander, 2019).</p> <p>Study start/end date: not specified</p> <p>Funding source: following financial support for the research, authorship, and/or publication of this article: research supported by the Research and Creative Activities Fund of Texas Christian University</p> <p>Declaration of interest: no potential conflicts of interest with respect to the research, authorship, and/or publication of this article</p> <p>Ethical approval needed/obtained for study: approved by the IRB at the affiliated university</p> <p>Comments by study authors: not specified</p> <p>Miscellaneous outcomes by the review authors: information received from authors (Alexander, 2019): all participants remained in the study</p> <p>Correspondence: Gina K. Alexander, PhD, Assistant Professor, Texas Christian</p>

Category	Extracted data
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Table D6.2

Berger 2011

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power sample size calculation, level of power achieved): not specified</p> <p>Imputation of missing data: not specified</p>
Participants	<p>Country: Israel</p> <p>Setting: well baby clinics</p> <p>Age: mean = 48.5 (SD = 7.26) years</p> <p>Sample size (randomized): 80</p> <p>Sex: 80 women</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available at baseline): baseline results for secondary traumatization factors (Professional Quality of Life scale, ProQOL) compared to norms based on 2 large scale studies, of civilian population (CP) samples and mental health care providers (MHCP) in the US: higher levels of compassion fatigue (22.5% in this sample vs 13% in CP and 13.2% in the MHCP) and burnout (32.5% in this sample vs 23% in CP and 13% in MHCP) and higher levels of lack of compassion satisfaction (68.7% in this sample vs 37.0% in CP and 39.3% in MHCP)</p> <p>Population description: 90 well baby clinic nurses living under chronic threat of war and terror; from the most affected areas in the north and the south of Israel</p> <p>Inclusion criteria: not specified</p> <p>Exclusion criteria: not specified</p> <p>Attrition (withdrawals and exclusions): not specified</p> <p>Reasons for missing data: not specified</p>
Interventions	<p>Intervention: well baby clinic staff preparedness program ($n = 42$)</p> <ul style="list-style-type: none"> • <i>delivery</i>: face-to-face; group sessions (15-20 nurses); each session: included theoretical knowledge on various topics, experiential exercises where the examples from the nurses' work or personal life experience were shared, learned skills which were practiced during the session and homework assignments in between sessions • <i>providers</i>: not specified • <i>duration of treatment period and timing</i>: 12 weekly 6-hour sessions; homework assignments between sessions; three 5-hour supervision sessions held monthly after the intervention • <i>description</i>: <ul style="list-style-type: none"> ○ SESSION 1 – Identifying personal resources: establishing a safe and secure atmosphere, setting goals and expectations and identifying WBC nurses' personal resource profiles. Nurses' tasks: observe and monitor one's own coping strategies at home and in the clinic ○ SESSION 2 – Strengthening and learning new coping skills: learning how to strengthen their natural resources as well as acquiring new sensory-motor, cognitive and emotional coping skills in deficient areas. Nurses' tasks: practice the new skills at home and in the clinic with the parents ○ SESSION 3 – Attachment theory and child-parent relationship: overview of attachment theory including normative and abnormal transitions based on research and current developmental theories. Nurses' tasks: observe and monitor distressed children at home and in the clinic ○ SESSION 4 – The phenomenology of traumatized young children: overview of stressful and traumatized infants and toddlers with a focus on developmental issues, child-parent relationships and

Category	Extracted data
	<p>attachment patterns. Nurses' tasks: observe and monitor distressed children at home and in the clinic</p> <ul style="list-style-type: none"> ○ SESSION 5 – Establishing safety and security for young children: learning how to help parents foster a safe and secure environment for their children, particularly during stressful and traumatic periods. Nurses' tasks: instruct and demonstrate safety inducing techniques to parents ○ SESSION 6 – Assisting parents to stabilize and soothe young children: learning how to teach parents relaxation and affect-modulation strategies for distressed infants and children. Nurses' tasks: practice and model the strategies in the clinic with parents ○ SESSION 7 – Acknowledging and containing the emotional world of young children: sensitizing parents to the emotional reactions of children during traumatic stress and teaching them emotional containment techniques. Nurses' tasks: practice learned techniques in the clinic with parents ○ SESSION 8 – Helping parents deal with children's fears: gaining knowledge regarding age-appropriate fears and learn ways to normalize and encourage parents to tolerate and handle them. Nurses' tasks: practice strategies to handle the children's' fears in the clinic with parents ○ SESSION 9 – Anger, rage and aggressive behavior of children: learning the role of aggression and anger in children during traumatic situations and ways to set limits and express anger in a constructive manner. Nurses' tasks: practice ways to deal with anger and behavioral problems with parents ○ SESSION 10 - Building a social shield: acknowledging the importance of social support during traumatic stress and learning ways to assist parents and themselves to seek social support. Nurses' tasks: explore ways to strengthen nurses' peer support as well as enhancing parents' social support ○ SESSION 11 – Preventing secondary traumatization and burnout: Providing an overview of signs of secondary traumatization and burnout and exploring the underlying mechanisms. Learning techniques to prevent and decrease these phenomena. Nurses' tasks: practice the learned techniques ○ SESSION 12 - Seeking a better future: reviewing all the skills and techniques that were learned in the program and planning how to use them further in the future. Nurses will be given an opportunity for closure. Nurses' tasks: establish a stress-prevention program for young children and their parents and apply it within the clinic ○ AIMS: provide nurses with psycho-educational knowledge pertaining to stress and trauma in infants and young children, to provide them with screening tools for identifying children and parents at risk of developing stress-related problems, equip them with stress management techniques for both children and adults; included knowledge regarding attachment theory and the development of the child parent relationship, the processing of stressful and traumatic experiences, identifying personal strengths and acquiring new coping techniques; nurses learned and practiced self-maintenance tools including skills such as breathing, meditation, relaxation, physical exercises, self-affirmation and guided imagery; techniques were taught and applied so as to enhance staff team-building and mutual support <ul style="list-style-type: none"> ● <i>compliance</i>: 37 (88.2%) participated in all sessions, 3 (7.1%) participated in 11 sessions, and 2 (4.7%) participated in 10 sessions

Category	Extracted data
	<ul style="list-style-type: none"> • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>: designed by the first author in collaboration with the well baby clinic's chief nurse and the regional supervisors; based on a need assessment performed by the regional supervisors; modules chosen intended to address the difficulties reported by the well baby clinics' nurses during the war (insufficient personal resources to cope with traumatic conditions, minimal knowledge regarding stress and trauma in young children, lack of techniques to deal with acutely stressed children and their parents); some of the work based on a resiliency manuals for elementary school children developed by the authors (e.g., Berger et al., 2007)
	Control: wait-list control ($n = 38$)
Outcomes	<p>Outcomes collected and reported:</p> <ul style="list-style-type: none"> • professional sense of self-efficacy - Disaster-Helper Self-Efficacy Scale • secondary traumatization, (lack) of compassion satisfaction - ProQOL • secondary traumatization, burnout - ProQOL • secondary traumatization, compassion fatigue - ProQOL • self-esteem - Rosenberg self-esteem scale • hope - Hope Scale • sense of mastery - Mastery Scale <p>Time points measured and reported: 1) pre-intervention; 2) 3-month follow-up (3 months postintervention during follow-up session)</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: no correspondence required</p> <p>Study start/end date: intervention took place between February and May 2007; exact study dates not specified</p> <p>Funding source: funding of the intervention by the ministry of health (no other roles)</p> <p>Declaration of interest: none declared</p> <p>Ethical approval needed/obtained for study: ethical approval by University of Haifa ethics committee</p> <p>Comments by authors: not specified</p> <p>Miscellaneous outcomes by the review authors: not relevant</p> <p>Correspondence: Marc Gelkopf, Lev-Hasharon Mental Health Center, POB 90000, Netanya 42100, Israel; emgelkopf@013.net.il; Tel.: +972 54 571 4344/9 8981169; fax: +972 9 894 5054; Rony Berger: riberger@netvision.net.il</p>

Table D6.3

Bernburg 2016

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power sample size calculation, level of power achieved): not specified</p> <p>Imputation of missing data: not specified</p>
Participants	<p>Country: Germany</p> <p>Setting: department of pediatric clinics (of 10 hospitals)</p> <p>Age: mean = 27 (SD = 2.1) years</p> <p>Sample size (randomized): 54</p> <p>Sex: 38 women, 16 men</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available at baseline: not specified</p> <p>Population description: junior physicians working in department of pediatric clinics from 10 hospitals</p> <p>Inclusion criteria: 1) employment in pediatrics; 2) working full-time in a hospital; 3) work experience of less than 2 years; 4) being able and willing to participate; 5) agreement to complete 3 questionnaires</p> <p>Exclusion criteria: not specified</p> <p>Attrition (withdrawals and exclusions): high response rate; dropout rate (loss to follow-up) was very low; number of withdrawals or exclusions not specified</p> <p>Reasons for missing data: not specified</p>
Interventions	<p>Intervention: psychosocial competency training (PCT) (<i>n</i> = 26)</p> <ul style="list-style-type: none"> • <i>delivery</i>: face-to-face; group sessions (2 training groups); theoretical input, watching videos, oral group discussions, experimental exercises, and home assignments • <i>providers</i>: two qualified psychologists, both trained in cognitive-behavioral and solution-focused work performed the PCT in two training groups • <i>duration of treatment period and timing</i>: 12 1.5h-hour weekly sessions • <i>description</i>: focused on current working situations and problems, coping strategies, and support between colleagues and future professional goals <ul style="list-style-type: none"> ○ SESSIONS: (1) introduction: "working life of a pediatrician", (2) first work experiences in pediatrics, (3) and (4) psychosocial skills for pediatricians (mindfulness, self-awareness, resilience), (5) handling conflict in the work setting, (6) seeking guidance about one's own clinical performance in pediatric medicine, (7) relaxation techniques (progressive muscle relaxation), (8) organizational culture, reporting one's own mistakes and dealing with mistakes caused by others, (9) communication in the hospital setting, (10) dealing with difficult decisions, social support, how to speak up to supervisors and senior physicians, (11) self-care, coping with work-related stress, and lastly, (12) session evaluation • <i>compliance</i>: not specified • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>: psychosocial skills training, combined with cognitive-behavioral and solution-focused counseling <p>Control: no intervention; comparison group did not receive any support related to the intervention topic like any other psychosocial skills training, counseling, or therapy (<i>n</i> = 28)</p>
Outcomes	<p>Outcomes collected and reported:</p> <p><i>Primary outcome</i></p>

Category	Extracted data
	<ul style="list-style-type: none"> • job satisfaction - Copenhagen Psychosocial Questionnaire • perceived stress - Perceived Stress Questionnaire • work engagement - short version Utrecht Work Engagement Scale <p>Time points measured and reported: 1) pre-intervention; 2) postintervention (after 3-month intervention); 3) 3-month follow-up (3 months postintervention/6 months after baseline)</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: no correspondence required</p> <p>Study start/end date: performed between May 2014 to October 2014</p> <p>Funding source: no funding support</p> <p>Declaration of interest: no conflicts of interest declared</p> <p>Ethical approval needed/obtained for study: ethical approval by the Free University Berlin</p> <p>Comments by authors: not specified</p> <p>Miscellaneous outcomes by the review authors: not relevant</p> <p>Correspondence: Monika Bernburg: akinomber@hotmail.com; corresponding author: Stefanie Mache, Institute of Occupational Medicine, Social Medicine and Environmental Medicine, Goethe-University, Theodor-Stern-Kai 7, 60590 Frankfurt am Main, Germany; Institute for Occupational and Maritime Medicine (ZfAM), University Medical Center Hamburg-Eppendorf, Seewartenstrasse 10, 20459 Hamburg, Germany; s.mache@uke.de</p>

Table D6.4

Bernburg 2019

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power & sample size calculation, level of power achieved): not specified</p> <p>Imputation of missing data: no imputation of missing data; per-protocol analysis (i.e., without the 6 participants who were excluded due to sickness absence)</p>
Participants	<p>Country: Germany</p> <p>Setting: nurses working in psychiatric hospital departments; training modules conducted off-duty; training setting not specified</p> <p>Age: mean = 32.03 (SD = 2.4) years</p> <p>Sample size (randomized): 92</p> <p>Sex: 69 women, 17 men</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: perceived stress in Perceived Stress Questionnaire (PSQ): IG = 3.34 (0.49), CG = 3.49 (0.50)</p> <p>Population description: nurses working in psychiatric hospital departments</p> <p>Inclusion criteria: 1) employment as a full-time nurse in a psychiatric hospital department; 2) time to take part in the study over the whole time period; 3) written consent to finish the surveys (at baseline and 3 follow-up periods)</p> <p>Exclusion criteria: not specified</p> <p>Attrition (withdrawals and exclusions): 6 exclusions (group not specified)</p> <p>Reasons for missing data: sickness absence ($n = 6$)</p>
Interventions	<p>Intervention: mental health promotion intervention ($n =$ not specified; after $n = 6$ total exclusions: $n = 44$)</p> <ul style="list-style-type: none"> • <i>delivery</i>: face-to-face group setting (researchers included 4 groups; group size approximately 10-12 nurses); all training modules involve theoretical input, watching videos, oral group discussions, experimental exercises, home assignments • <i>providers</i>: 2 certified instructors (registered and accredited as psychotherapists) performed the training; with sufficient qualifications in cognitive behavioral therapy and systemic/solution-focused brief therapy in group settings • <i>duration of treatment period and timing</i>: 12 weekly 1.5-2-hour sessions; sessions performed off duty • <i>description</i>: <ul style="list-style-type: none"> ○ focused on current working situations and problems, coping strategies, and support between colleagues and future professional goals ○ includes work-related stress management training, problem solving techniques, solution-focused counseling ○ CONTENT OF TRAINING MODULES: <ul style="list-style-type: none"> ▪ 1. UNIT Introduction: opening, psycho-educational information and discussion on the topic: working as a nurse/Psychiatry ▪ 2./3. UNIT: module on work-related problems and strategies to solve problems in the working context of nurses in Psychiatry ▪ 4./5. UNIT: module on relaxation techniques, emotion regulation techniques, cognitive strategies, acceptance, and tolerance of emotions and effective self-support

Category	Extracted data
	<ul style="list-style-type: none"> ▪ 6./7. UNIT: module on conflict management at work: conflict types and conflict handling in the hospital setting ▪ 8. UNIT: module on planning for the future: looking for supervision and feedback on one's own job performance ▪ 9. UNIT: module on communication for nurses: how to improve communication with patients, colleagues and supervisors in the hospital setting ▪ 10. UNIT: module on organizational hospital culture: that is, how to report mistakes to colleagues and supervisors and dealing with mistakes ▪ 11. UNIT: module on social support: how to use social support during work, how to handle difficult work situations ▪ 12. UNIT: overall training evaluation by the participating nurses <ul style="list-style-type: none"> • <i>compliance:</i> <ul style="list-style-type: none"> ○ $n = 6$ excluded due to sickness absence (not specified which group) ○ satisfaction with training: participants give good and satisfied grades; overall satisfaction score: 1.39; all nurses verify that training was worth attending (mean = 5.21) and that they have learnt something meaningful and important in this course (mean = 4.31); training motivated them to train and practice the content offered (mean = 4.87) • <i>integrity of delivery:</i> not specified • <i>economic information:</i> not specified; training sessions were performed off duty • <i>theoretical basis:</i> designed on basis and values of mindfulness and acceptance training, cognitive behavioral training and solution-focused group work (Wise et al., 2012) <p>Control: wait-list control (n = not specified; after $n = 6$ total exclusions: $n = 42$); no training, but answer all surveys included in the study</p>
Outcomes	<p>Outcomes collected and reported:</p> <p><i>Primary outcome</i></p> <ul style="list-style-type: none"> • perceived stress - PSQ <p><i>Secondary outcome</i></p> <ul style="list-style-type: none"> • resilience - Brief Resilient Coping Scale self-efficacy - Self-Efficacy, Optimism and Pessimism • emotion regulation skills, comprehension - Emotion Regulation Skills Questionnaire (ERSQ-27) • emotion regulation skills, acceptance - ERSQ-27 • emotion regulation skills, self-support - ERSQ-27 • relationship to patients, support - German Quality of Relationship Inventory (QRI) • relationship to patients, conflict - QRI • relationship to patients, depth - QRI <p>Time points measured and reported: 1) pre-intervention; 2) postintervention (at 3 months, i.e., at the end of 3-month intervention; follow-up 1); 3) 3-month follow-up (at 6 months, i.e., 3 months after end of 3-month intervention; follow-up 2); 4) 9-month follow-up (at 12 months, i.e., 9 months after 3-month intervention; follow-up 3)</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: We contacted the authors to ask about the number of exclusions per group and whether it is correct that they performed per-protocol</p>

Category	Extracted data
	<p>analysis with $n = 44$ in IG and $n = 42$ in CG for the outcomes reported in Table 2 (Mache, 2019b).</p> <p>Study start/end date: not specified</p> <p>Funding source: not specified</p> <p>Declaration of interest: no conflict of interest to disclose</p> <p>Ethical approval needed/obtained for study: not specified</p> <p>Comments by authors: not specified</p> <p>Miscellaneous outcomes by the review authors: not relevant</p> <p>Correspondence: Monika Bernburg: akinomber@hotmail.com; corresponding author: Stefanie Mache, Institute of Occupational Medicine, Social Medicine and Environmental Medicine, Goethe-University, Theodor-Stern-Kai 7, 60590 Frankfurt am Main, Germany; Institute for Occupational and Maritime Medicine (ZfAM), University Medical Center Hamburg-Eppendorf, Seewartenstrasse 10, 20459 Hamburg, Germany; s.mache@uke.de</p>

Table D6.5

Calder Calisi 2017

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power & sample size calculation, level of power achieved): power not specified; small sample size of pilot study a limitation, as does not allow for a large enough change between the 2 groups pre- and postintervention</p> <p>Imputation of missing data: no imputation of missing data; per-protocol analysis (i.e., 7 dropouts excluded)</p>
Participants	<p>Country: USA</p> <p>Setting: Massachusetts General Hospital</p> <p>Age: range = 27-60 years</p> <p>Sample size (randomized): 53</p> <p>Sex: 53 women (nurses)</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: state anxiety (State Trait Anxiety Inventory, STAI): IG = 38.40 (6.65), CG = 38.14 (7.56); anxiety (Visual Analog Scale, VAS; range = 0 (no anxiety) to 7 (most anxiety)): IG = 3.92 (1.44), CG = 3.59 (1.26); depression (VAS; range = 0-7): IG = 2.68 (1.49), CG = 2.86 (1.58)</p> <p>Population description: (cardiac) nurses</p> <p>Included criteria: not specified</p> <p>Excluded criteria: not specified</p> <p>Attrition (withdrawals and exclusions): 7 (13.2%) discontinued the study</p> <p>Reasons for missing data: not specified as participants provided no reasons for withdrawing</p>
Interventions	<p>Intervention: Relaxation Response (RR) (n randomized = not specified; after 7 dropouts, <i>n</i> = 24)</p> <ul style="list-style-type: none"> • <i>delivery</i>: combined setting: face-to-face (in-service), group setting (classes) + individual training of relaxation technique at home • <i>providers</i>: not specified for in-service in RR; self-guided training over 8 weeks • <i>duration of treatment period and timing</i>: 8 weeks in total: single 45-minute session (in-service) + individual daily practice (exercises for 10-20 minutes, 2x per day) for 8 weeks • <i>description</i>: <ul style="list-style-type: none"> ○ relaxation technique created by Benson ○ IN-SERVICE regarding RR: nurses learn about benefits and utilization of RR in their personal lives and practice actual technique in the class ○ 8 WEEKS: participants encouraged to do breathing exercises for 10-20 minutes, twice per day, for 8 weeks and to keep journal of their relaxation breathing sessions; RR consists of diaphragmatic breathing pattern and a repetitive mental focus that breaks the train of everyday thought • <i>compliance</i>: not specified; <i>n</i> = 7 withdrew from study in general; all data were accepted in the study, that is, also from nurses in IG who may have completed fewer than the suggested number of relaxation sessions • <i>integrity of delivery</i>: not specified; participants keep journal of their relaxation breathing sessions • <i>economic information</i>: not specified • <i>theoretical basis</i>:

Category	Extracted data
	<ul style="list-style-type: none"> ○ relaxation; developed by Dr. Herbert Benson (Benson & Klipper, 2000) ○ RR = complementary therapy that supports holistic self-care, including the physical, emotional, mental, and spiritual aspects of the individual ○ Theoretical framework of the study as whole: Watson's Theory on Human Caring: value of "transpersonal caring" or the interaction between the caregiver and the care receiver through various interventions to induce positive change in patients' lives <p>Control: wait-list control (n randomized not specified; after $n = 7$ dropouts: $n = 22$; eligible to receive the class at the termination of the study, if they so desired)</p>
Outcomes	<p>Outcomes collected and reported:</p> <ul style="list-style-type: none"> • state anxiety - STAI • trait anxiety - STAI • anxiety - VAS/Semantic differential scales • depression - VAS/Semantic differential scales • work-related stress - VAS/Semantic differential scales • well-being - VAS/Semantic differential scales • confidence to teach - VAS/Semantic differential scale <p>Time points measure and reported: 1) pre-intervention; 2) postintervention</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: We contacted the authors to receive the means and SDs for all outcomes at postintervention (instead of change scores), but received no response to two inquiries.</p> <p>Study start/end date: not specified</p> <p>Funding source: Make a Difference Grant at Massachusetts General Hospital</p> <p>Declaration of interest: not specified</p> <p>Ethical approval needed/obtained for study: approved by hospital IRB</p> <p>Comments by study authors: not specified</p> <p>Miscellaneous outcomes by the review authors: not relevant</p> <p>Correspondence: Catherine Calder Calisi, Massachusetts General Hospital, 36 Arrowwood Street, Methuen, Massachusetts 01844; ccalder1@partners.org</p>

Table D6.6

Chesak 2015

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power sample size calculation, level of power achieved): not specified</p> <p>Imputation of missing data: no imputation of missing data; per-protocol analysis with participants who complied with allocated intervention and for whom outcomes were obtained</p>
Participants	<p>Country: USA</p> <p>Setting: nurse orientation program at Mayo Clinic</p> <p>Age: mean = 28.16 (SD = 8.29) years</p> <p>Sample size (randomized): 55</p> <p>Sex: 38 women, 2 men (in analyzed sample)</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: anxiety (Generalized Anxiety Disorder 7-item scale, GAD-7): IG = 3.11 (2.76), CG = 4.25 (2.77)</p> <p>Population description: nurses who were new to the institution or transitioning to a new unit or new role and who were undergoing new nurse orientation</p> <p>Inclusion criteria: 1) registered nurses (RN) who were enrolled in 1 of 2 designated nurse orientation classes; 2) RNs who were willing and able to participate in all aspects of the study; 3) RNs who were provided with, understood, and signed the informed consent</p> <p>Exclusion criteria: 1) if they reported currently or recently (within the past 6 months) experiencing a psychotic episode; 2) if they reported a clinically significant acute psychiatric event, or a physical illness</p> <p>Attrition (withdrawals and exclusions): 4 withdrawals before the intervention (IG = 2, CG = 2); total number of withdrawals: $n = 15$ (IG = 8/27 (29.6%), CG = 7/28 (25%)); i.e., 40 completed the study (IG = 19, CG = 21)</p> <p>Reasons for missing data: 4 withdrawals before the intervention: declined to participate in allocated group prior to first group session; not exactly specified for further withdrawals (nurse participants who voluntarily dropped out of the study: inability to make time for the program)</p>
Interventions	<p>Intervention: Stress Management and Resiliency Training (SMART) ($n = 27$)</p> <ul style="list-style-type: none"> • <i>delivery</i>: face-to-face session; handouts on each of the topics via email • <i>providers</i>: study investigator; not further specified • <i>duration of treatment period and timing</i>: single 90-minute session; 1-hour follow-up session after 4 weeks; biweekly handouts • <i>description</i>: <ul style="list-style-type: none"> ○ presentation of a model of stress and resilience, integrating neuroscience and biology (during single session) ○ based on this model, mind-body approaches to managing stress were discussed, including developing intentional attention and practicing gratitude, compassion, acceptance, forgiveness, and higher meaning • <i>compliance</i>: $n = 27$ randomized; $n = 2$ declined to participate in intervention (after randomization); All 25 participants in the intervention group participated in the first group session. Only 4 participants were present at the follow-up session for the intervention group, mainly because of scheduling issues • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified

Category	Extracted data
	<ul style="list-style-type: none"> <i>theoretical basis</i>: SMART program developed at Mayo Clinic by a physician in the Division of Complementary and Integrative Medicine who has extensive experience in the field of resiliency training; The program is designed to help participants understand the neuroscience and biology of stress. From that understanding, participants learn skills to develop intentional attention and reframe life experiences using the 5 core principles of gratitude, compassion, acceptance, forgiveness, and higher meaning. <p>Control: active control ($n = 28$)</p> <ul style="list-style-type: none"> <i>delivery</i>: lecture <i>providers</i>: not specified <i>duration of treatment period and timing (frequency, duration of each session)</i>: not specified <i>description</i>: lecture associated with the nursing orientation program that covered topics related to stress, including reality shock and work-life connectedness <i>compliance</i>: $n = 28$ randomized; $n = 2$ declined to participate in control (after randomization), 26 took part in the control group <i>integrity of delivery</i>: not specified <i>economic information</i>: not specified <i>theoretical basis</i>: not specified
Outcomes	<p>Outcomes collected and reported:</p> <p><i>Primary outcome</i></p> <ul style="list-style-type: none"> perceived stress - Perceived Stress Scale mindfulness - Mindful Attention Awareness Scale anxiety - GAD-7 resilience - Connor-Davidson Resilience Scale <p>Time points measured and reported: 1) pre-intervention; 2) 3-month follow-up (3 months after single-session intervention)</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: no correspondence required</p> <p>Study start/end date: not specified</p> <p>Funding source: not specified</p> <p>Declaration of interest: Dr Sood has a proprietary interest in a company that teaches resiliency programs. The other authors have no financial or proprietary interest in the subject matter of this article.</p> <p>Ethical approval needed/obtained for study: institutional review board-approved trial</p> <p>Comments by authors: not specified</p> <p>Miscellaneous outcomes by the review authors: not relevant</p> <p>Correspondence: Sherry S. Chesak, PhD, Department of Nursing, Mayo Clinic, 200 First St. SW Rochester, Minnesota 55905 Tel: (507) 255-3236; chesak.sherry@mayo.edu</p>

Table D6.7

Cheung 2014

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power sample size calculation, level of power achieved): Based on a small effect size of Cohen's $d = 0.2$ for the outcome measures, and an attrition rate of 30% during the 6-month follow-up, sample sizes of 259 in each arm could achieve a power of 0.80 to detect a significant difference. A total sample of 518 was needed (Machin et al., 1997); however, interest from the Auxiliary Medical Service (AMS) was higher than expected and the total sample size immediately pre-training ($n = 802$) was higher than the sample size that was needed.</p> <p>Imputation of missing data: no imputation of missing data; per-protocol analysis (only participants who completed allocated intervention, i.e., without 2 participants in IG who did not complete Psychological First Aid (PFA) intervention) and available case analysis (only participants for whom outcomes were obtained)</p>
Participants	<p>Country: China (including Hong Kong)</p> <p>Setting: AMS of the Hong Kong Special Administrative Region</p> <p>Age: mean = 37.38 (SD = 11.78) years</p> <p>Sample size (randomized): 918</p> <p>Sex: 412 women, 391 men</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: general psychopathology in General Health Questionnaire (GHQ-28): IG = 0.67 (0.31), CG = 0.60 (0.32); psychological distress in Depression Anxiety Stress Scales – short version (DASS-21): IG = 0.80 (0.57), CG = 0.76 (0.57); distress from traumatic exposure (Impact of Event Scale-Revised, IES-R): IG = 0.68 (0.64), CG = 0.60 (0.67); significantly higher depression and anxiety symptoms than normative sample of university students ($P < 0.001$); significantly lower stress symptoms than normative sample ($P < 0.001$)</p> <p>Population description: members of AMS of the Hong Kong Special Administrative Region, a government division responsible for providing voluntary supplementary medical and health service in times of community emergency; voluntary first responders of the AMS with and without previous trauma exposure</p> <p>Inclusion criteria: 1) first responders, including fire fighters, police, ambulance officers, rescuers and auxiliary medical personnel; 2) with and without previous trauma exposure (see appendix of the publication, information from trial registration)</p> <p>Exclusion criteria: interested individuals with psychiatric history or current diagnosis of psychiatric disorders (see appendix of the publication, information from trial registration)</p> <p>Attrition (withdrawals and exclusions): between randomization and pre-intervention assessment: 116 withdrawals (IG = 63, CG = 53); between pre- and postintervention (during training): 2 withdrawals (IG = 2); 67 withdrawals between postintervention and 3-month follow-up (IG = 29; CG = 38); 109 withdrawals between 3-month follow-up and 6-month follow-up (IG = 45; CG = 64); completion rate for total trial (i.e., from pre-intervention assessment to 6-month follow-up): IG = 80%, CG = 75%</p> <p>Reasons for missing data: not specified</p>
Interventions	<p>Intervention: PFA ($n = 458$)</p> <ul style="list-style-type: none"> • <i>delivery</i>: face-to-face; group sessions; didactic lecture, group discussions, simulation role play exercises

Category	Extracted data
	<ul style="list-style-type: none"> • <i>providers</i>: all sessions conducted by author, who is registered clinical psychologist in Hong Kong and has frontline experience in offering psychological support to disaster survivors • <i>duration of treatment period and timing</i>: 1-day 7-hour training • <i>description</i>: <ul style="list-style-type: none"> ○ content developed and based on 8 core actions: <ul style="list-style-type: none"> ▪ 1) CONTACT AND ENGAGEMENT: how to approach people in need ▪ 2) SAFETY AND COMFORT: emphasizes principles of safety and comfort of the individuals and protection of survivors from additional traumatic experiences ▪ 3) STABILIZATION: describes stabilization and grounding techniques for calming emotionally overwhelmed survivors ▪ 4) INFORMATION GATHERING: gathering of necessary information about the current situations and services available ▪ 5) PRACTICAL ASSISTANCE: highlights how to offer practical assistance and discuss with individuals what they can do for themselves ▪ 6) CONNECTION WITH SOCIAL SUPPORTS: connect individuals with their social support ▪ 7) INFORMATION ON COPING: to some individuals, knowing the normal stress reactions and learning some relaxation skills helped them cope with abnormal situations ▪ 8) LINKAGE WITH COLLABORATIVE SERVICES: for severely disturbed people, 8th core action is about referrals and links to existing services in the community for long-term follow-up; 3 simulation role play exercises with scenarios relevant to Hong Kong situation to practice core actions; discussion of responder's self-care and taking care of each other in the field ○ PART 1 (120 minutes): pre-program assessment; welcome and introduction; introduction of PFA knowledge on disaster mental health; PFA core action 1. contact and engagement; PFA core action 2. safety and comfort; PFA core action 3. stabilization; scenario-based simulation role play exercise: flooding in a fishing village ○ PART 2 (90 minutes): PFA core action 4. information gathering: current needs; PFA core action 5. practical assistance; scenario-based simulation role play exercise: fire disaster happened in a 20-storey residential building in downtown ○ PART 3 (90 minutes): PFA core action 6. connection with social supports; PFA core action 7. information on coping; PFA core action 8. linkage with collaborative services; PART 4 (120 minutes): self and team care; scenario-based simulation role play exercise: airport disaster; post-program assessment • <i>compliance</i>: 393/395 completed the intervention, $n = 2$ dropouts (see flow chart) • <i>integrity of delivery</i>: not specified • <i>economic information (intervention cost, changes in other costs as result of intervention)</i>: not specified • <i>Theoretical basis</i>: Chinese translation of the PFA: Field operation guide 2nd edition by National Child Traumatic Stress Network National Center for Posttraumatic Stress Disorder (Brymer et al., 2019)

Category	Extracted data
Outcomes	<p>Control: wait-list control ($n = 460$)</p> <p>Outcomes collected and reported:</p> <p>Primary outcomes:</p> <ul style="list-style-type: none"> • actual helping behavior - single items for actual psychological support to people affected in emergency and details of service - not reported (numbers of participants who engaged in providing actual psychological support during time points too small for statistical analyses) • self-efficacy - 13-item self-efficacy scale - reported • knowledge on PFA and disaster mental health - self-developed scale - reported <p>Secondary outcomes:</p> <ul style="list-style-type: none"> • general psychopathology - GHQ-28 • psychological distress - DASS-21 • distress from exposure to trauma - IES-R • resilience - Conner-Davidson Resilience Scale • coping of stress (adaptive and maladaptive coping) - Brief Coping Orientation to Problems Experienced • life satisfaction - Satisfaction with Life Scale • social support - Multidimensional Scale of Perceived Social Support <p>Time points measured and reported: 1) pre-intervention; 2) postintervention (only IN IG); 3) 3-month follow-up (3-months postintervention); 6) 6-month follow-up (6 months postintervention)</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: no correspondence required</p> <p>Study start/end date: April 2011 to November 2011</p> <p>Funding source: Chinese University of Hong Kong (CUHK) Direct Grant for Research #2009.2.041; Student Research Grant (see trial registration)</p> <p>Declaration of interest: not specified</p> <p>Ethical approval needed/obtained for study: ethics approvals from Survey and Behavioral Research Ethics Committee and Clinical Research Ethics Committee</p> <p>Comments by authors: registered at the CUHK Centre for Clinical Trials, Clinical Trials Registry (CUHK-CCT00278)</p> <p>Miscellaneous outcomes by the review authors: dissertation</p> <p>Correspondence: Yee Lai Eliza Cheung, School of Public Health and Primary Care, CUHK; eliza.cheung@cuhk.edu.hk; chair: Prof. Yeung Shan Samuel Wong; supervisor: Prof. Ying Yang Emily Chan; The Jockey Club School of Public Health and Primary Care, CUHK, Ngan Shing St, Sha Tin, Hongkong; emily.chan@cuhk.edu.hk</p>

Table D6.8

Cieslak 2016

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Power (power sample size calculation, level of power achieved): not specified</p> <p>Unit of randomization: individuals</p> <p>Imputation of missing data: 85 in IG2 excluded due to high dropout; for missing data in IG1 and CG: multiple imputation method (imputation with regression procedures; estimated maximization); intent-to-treat analysis for these two groups only</p>
Participants	<p>Country: Poland</p> <p>Setting: health and human service professionals; setting not specified; designated website</p> <p>Age: mean = 37.49 (SD = 10.39) years</p> <p>Sample size (randomized): 253 (in total randomized to 3 groups); 168 participants in IG1 and CG reported here</p> <p>Sex: 131 women, 37 men</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: secondary traumatic stress (Secondary Traumatic Stress Scale, STSS): IG1 = 2.26 (0.58), CG = 2.42 (0.66); burnout (Oldenburg Burnout Inventory, OLB) at baseline: IG1 = 2.86 (0.51); CG = 3.00 (0.71)</p> <p>Population description: health and human service professionals (e.g., physicians, nurses, first responders, social workers, psychotherapists, education specialists, police officers and firefighters, other human service providers) exposed indirectly to traumatic events at work</p> <p>Inclusion criteria: 1) providing services for survivors of traumatic events for at least 1 year; 2) experiencing indirect exposure to a traumatic event at work; 3) consent for participating in an internet-based program aiming at the enhancement of psychosocial resources improving mental health</p> <p>Exclusion criteria: professionals without exposure to trauma</p> <p>Attrition (withdrawals and exclusions): IG2 = 85 exclusions due to high dropout at postintervention (62%) and follow-up (78%); 86 (51.2%) exclusions in two other groups because did not respond to questionnaire at postintervention (IG1 = 46/87 (52.9%), CG = 40/81 (49.4%)); 100 (59.5%) did not respond to questionnaires at follow-up (IG1 = 54/87 (62.1%), CG = 46/81 (56.8%)); only 68 participants completed all IG1/CG procedures and participated in 3 measurements</p> <p>Reasons for missing data: 54/168 participants in IG1 and CG gave reasons for withdrawal: e.g., personal reasons not related to intervention (39%), technical problems with website or internet access (15%)</p>
Interventions	<p>In total, 2 intervention groups (self-efficacy enhancement module and social support enhancing module) and one control group (educational module); social support enhancing module ($n = 85$) was not included in analyses due to high dropout</p> <p>Intervention: self-efficacy enhancement module of "The Helpers' Stress" ($n = 87$)</p> <ul style="list-style-type: none"> • <i>delivery:</i> <ul style="list-style-type: none"> ○ web-based intervention (designated website) ○ 4 modules/exercises (depending on module more interactive requiring some action like typing, filling, arguments etc. or less interactive (containing only instructions for exercises, e.g., think about, imagine that...)) ○ participants write down thoughts and comments in their diary ○ option to ask the experimenters about technical and procedural issues referring to the sessions; automatic e-mail reminders

Category	Extracted data
	<ul style="list-style-type: none"> • <i>providers</i>: designed to be implemented without help; automatic e-mail reminders; possibility to contact authors of the program; possibility to have contact by phone or e-mail with a psychologist; all experimenters had a Master's degree in psychology and had at least 1 year work experience in the context of occupational health • <i>duration of treatment period and timing</i>: 4-6 weeks to read the content and do the exercises (1 session per week) • <i>description</i>: <ul style="list-style-type: none"> ○ 4 sessions: (1) introductory informational materials, (2) self-efficacy exercises or extended information materials in the experimental and control groups respectively, (3) homework assignments, and (4) summaries of the session ○ participants asked to make notes in their web-based personal diary to keep track of their thoughts referring to the sessions and their content; techniques complementary to face-to-face cognitive-behavior treatment, such as activity planning, skill training, and cognitive bias modification ○ exercises refer to: identifying and recollecting one's own mastery experience, analyzing personal experiences of dealing with barriers, planning for self-efficacy enhancement, identifying negative thoughts indicating self-doubts and transforming them into self-efficacy statements and identifying positive emotions accompanying self-efficacy statement; exercises required to write thoughts and statements online ○ across the exercises, participants asked to choose the context: they could refer to dealing with any stressors encountered at home or work; elicited self-efficacy statements contextualized respectively (either referred to work-related tasks and stressors, including indirect exposure to traumatic events or to home-related tasks and stressors); homework assignments included suggestions about how participants might try to enhance their psychosocial resources (no specific homework assignments to be completed online) ○ SESSION 1: gaining self-efficacy from own past mastery experiences: participants asked to choose and recollect relevant personal situations when they were successful. Participants learned about thoughts, beliefs and behaviors that may prompt self-efficacy. ○ SESSION 2: participants asked to choose area of their life in which they experience stress and try to recall situations in which they did not handle stress as well as intended; they learned how different interpretations of failures and successes might affect self-efficacy and which interpretations are beneficial for their self-efficacy beliefs and well-being ○ SESSION 3: participants asked to identify barriers which hinder their ability to harbor strong self-efficacy beliefs; they learned how to face those negative thoughts and reformulate them into positive, self-efficacy enhancing statements; asked to name their personal benefits of harboring strong self-efficacy beliefs; participants form detailed plan about how to boost their self-efficacy beliefs ○ SESSION 4: participants asked to focus on their positive thoughts and learned how to increase the availability of positive thoughts; they learn about reciprocal relations between positive self-statements and positive emotions • <i>compliance</i>: not specified

Category	Extracted data
	<ul style="list-style-type: none"> • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>: <ul style="list-style-type: none"> ○ Self-efficacy enhancing module in this study: uses cognitive behavioral therapy (CBT) techniques and aims at strengthening relevant resource self-efficacy; content partially adapted from previously developed internet-based intervention for survivors of direct exposure to trauma (Steinmetz et al., 2012) which targeted self-efficacy through mastery experience, verbal persuasion, and emotion regulation techniques; also provided tools enabling survivors to seek social support for dealing with consequences of exposure to a natural disaster
	Control: attention control (educational module of “The Helpers’ Stress”) (n = 81)
	<ul style="list-style-type: none"> • <i>delivery</i>: web-based intervention (designated website); 4 modules/exercises; less interactive than IG; option to ask the experimenters about technical and procedural issues referring to the sessions; automatic e-mail reminders • <i>providers</i>: designed to be implemented without help; automatic e-mail reminders; possibility to contact authors of the program; possibility to have contact by phone or e-mail with a psychologist; all experimenters had a Master’s degree in psychology and had at least 1 year work experience in the context of occupational health • <i>duration of treatment period and timing</i>: 4-6 weeks to read the content and do the exercises (1 session per week) • <i>description</i>: <ul style="list-style-type: none"> ○ contained mainly educational materials on coping with stress at work and indirect exposure to trauma; 4 sessions: (1) introductory informational materials, (2) self-efficacy exercises or extended information materials in the experimental and control groups respectively, (3) homework assignments, and (4) summaries of the session ○ participants asked to make notes in their web-based personal diary to keep track of their thoughts referring to the sessions and their content; read-only educational materials, without exercises which required writing statements online; education referred to resources that could enable workers to manage work-related tasks and work-related stress, including indirect exposure to traumatic events; materials discussed various stressors (work-related and home-related), social and psychological resources (including social support and self-efficacy) that enable individuals to deal with stressors, and adverse consequences of stress at work, including STS and job burnout; homework assignments included suggestions about how participants might try to enhance their psychosocial resources ○ SESSION 1: educational materials: causes and symptoms of stress (including work stress), possible consequences of exposure to stress at work or at home across physical, social, and psychological aspects of health and well-being ○ SESSION 2: educational materials about eliciting social support, social support enhancement; role of social support in dealing with stress ○ SESSION 3: reading materials explaining concept of self-efficacy; content is corresponding which the content of the materials used in self-efficacy enhancement (instead of interactive form, reading materials are presented); are accompanied by short

Category	Extracted data
	<p>instructions (e.g., "Try to think about your biggest accomplishments and personal successes")</p> <ul style="list-style-type: none"> ○ SESSION 4: educational materials discussing other psychological and social resources like sense of coherence or hardiness which may be used to cope with stress at work and its consequences; educational materials about causes and symptoms of secondary traumatic stress; educational materials about the causes and symptoms of job burnout • <i>compliance</i>: not specified • <i>integrity of delivery</i>: not specified • <i>economic information (intervention cost, changes in other costs as result of intervention)</i>: not specified • <i>theoretical basis</i>: educational module in this study: also uses techniques of CBT (psychoeducation) but only contains basic contents of resources self-efficacy and social support; content partially adapted from previously developed internet-based intervention for survivors of direct exposure to trauma (Steinmetz et al., 2012)
Outcomes	<p>Outcomes collected and reported:</p> <ul style="list-style-type: none"> • self-efficacy - Secondary Trauma Self-Efficacy Scale • self-efficacy - Work Stress and Burnout Management Self-efficacy Scale • secondary traumatic stress - STSS • secondary post-traumatic growth - Posttraumatic Growth Inventory-Short form • burnout - OLB • work engagement - Utrecht Work Engagement Scale <p>(indirect exposure to traumatic events at work is no outcome measure; only assessed at time 1)</p> <p>Time points measured and reported: 1) pre-intervention; 2) postintervention; 3) 1-month follow-up (1-month postintervention)</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: We contacted the authors to get the information whether Cieslak 2016 and Rogala 2016 were two reports on the same study. In addition, we asked for the subgroup data for health and human service professionals (physicians, nurses, first responders, social workers, psychotherapists) (Rogala, 2019).</p> <p>Study start/end date: recruitment between October 2012 and May 2013; exact study dates not specified</p> <p>Funding source: created as part of the N N106 139537 grant awarded by the Ministry of Science and Higher Education and currently administered by Narodowe Centrum Nauki (contract No. 1395/B/H03/2009/37), implemented at the SWPS (University of Social Sciences and Humanities). Project manager: Dr Roman Cieślak</p> <p>Declaration of interest: research conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest</p> <p>Ethical approval needed/obtained for study: approved by the IRB at the SWPS University of Social Sciences and Humanities</p> <p>Comments by authors: not specified</p> <p>Miscellaneous outcomes by the review authors: Rogala 2016 in Polish (translated)</p> <p>Correspondence: Roman Cieslak, Department of Psychology, SWPS University of Social Sciences and Humanities, Warsaw, Poland and Trauma Health and Hazards Center, Department of Psychology, University of Colorado Colorado Springs, Colorado Springs, CO, USA; rcieslak@uccs.edu; Anna Rogala: SWPS University, Chodakowska 19/31, 03-815 Warsaw; anna.rogala@swps.edu.pl</p>

Table D6.9

Clemow 2018

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power & sample size calculation, level of power achieved): not specified</p> <p>Imputation of missing data: imputation for psychosocial outcomes not specified; for blood pressure measures: multilevel, repeated-measures regression analysis to generate full information maximum likelihood estimates of the group-specific average change in systolic blood pressure (SBP) and diastolic blood pressure (DBP); per-protocol analysis (i.e., only participants in IG who attended at least 6 sessions) and available case analysis (i.e., only participants in both groups who completed follow-up assessments) + intent-to-treat analysis ($n = 92$)</p>
Participants	<p>Country: USA</p> <p>Setting: delivered in workplace (large urban medical center)</p> <p>Age: mean = 48.5 (SD = 8.7) years</p> <p>Sample size (randomized): 92</p> <p>Sex: 71 women, 21 men</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: depression (Centers for Epidemiological Studies–Depression Scale, CES-D): IG = 14.5 (8.7), CG = 11.2 (10.2); burnout, emotional exhaustion (Maslach Burnout Inventory, MBI): IG = 19.2 (10.8), CG = 23.2 (12.6); burnout, depersonalization: IG = 5.4 (5.2), CG = 4.2 (4.4); burnout, personal accomplishment: IG = 32.3 (9.7), CG = 31.5 (11.3)</p> <p>Population description: employees (aged 18–70 years) of a large urban medical center identified through workplace blood pressure (BP) screenings</p> <p>Included criteria: 1) employees of large urban medical center; 2) aged 18–70 years; 3) whose screening BP (average of 3 measurements) was ≥ 140 mm Hg SBP or 90 mm Hg (DBP) and whose average readings did not exceed 180/110 mm Hg at both screening and subsequent baseline evaluation</p> <p>Excluded criteria: 1) pregnancy; 2) end-stage renal disease</p> <p>Attrition (withdrawals and exclusions): 11 dropouts after randomization (IG = 6, CG = 5; i.e., did not complete follow-up assessment); 2 participants (in IG) later found to have been ineligible</p> <p>Reasons for missing data: not specified ($n=11$); average BP measurement computed in error - actually below cut-off ($n = 2$ ineligible after randomization)</p>
Interventions	<p>Intervention: LifeSkills workshop (stress and anger management intervention/workshop on cognitive-behavioral coping skills) ($n = 46$)</p> <ul style="list-style-type: none"> • <i>delivery</i>: face-to-face group setting (groups of 8–10 participants) with video as adjunct to each session; individual consultation offered to participants who missed a session • <i>providers</i>: 3 doctoral-level clinical or counseling psychologists trained according to guidelines used by Williams LifeSkills, Inc., to serve as group facilitators; receive ongoing supervision from the senior study clinician to ensure fidelity to the material; sessions followed the Williams LifeSkills Workshop manual and video; same facilitator works with the same group of participants throughout the course of the intervention • <i>duration of treatment period and timing</i>: 10 weekly 1-hour sessions; group sessions conducted at mid-day lunch breaks, during workday (between 12 noon–2.00 pm) • <i>description</i>: <ul style="list-style-type: none"> ○ workshop on cognitive-behavioral coping skills; LifeSkills Workshop = structured cognitive-behavioral group intervention

Category	Extracted data
	<p>that draws on cognitive-behavioral techniques and stress reduction approaches</p> <ul style="list-style-type: none"> ○ training is framed as training to increase a person's resiliency for coping with stressful situations, rather than as treatment for a mental disorder ○ facilitator leads participants through each of several behavioral skills, modeling them as necessary ○ VIDEO developed as adjunct to each session, is integrated into each session, which standardizes the presentation of material ○ SKILLS include: self-monitoring, such as identification and evaluation of thoughts, feelings, and behaviors in response to stressful situations; problem solving; assertiveness in dealing with anger- and stress-inducing events and/or demands; deflection skills to reduce distress in stressful situations, such as breathing and muscle relaxation, distraction, and increasing distress tolerance; communication skills; and increasing empathy and building positive relationships ○ facilitators offer individual consultation to participants who missed a session <ul style="list-style-type: none"> • <i>compliance</i>: randomized participants attended with mean (SD) of 8.1 (1.8) group sessions, with 89.3% attending seven or more sessions; n = 39/46 attended at least 6 sessions and completed follow-up assessments (i.e., considered in per-protocol analysis) • <i>integrity of delivery</i>: involvement of developers of intervention in study restricted to ensure treatment fidelity through training and initial supervision of the clinician who subsequently trained and supervised the clinicians who delivered the intervention; weekly sessions are audio recorded to monitor treatment fidelity and to allow for supervision of the facilitators; facilitators receive ongoing supervision from the senior study clinician to ensure fidelity to the material • <i>economic information</i>: \$125 for completing the trial • <i>theoretical basis</i>: sessions followed the Williams LifeSkills Workshop manual and video (Riley et al., 2017); draws on cognitive-behavioral techniques and stress reduction approaches <p>Control: TAU (minimally enhanced) (n = 46)</p> <ul style="list-style-type: none"> • <i>delivery</i>: brochure (self-help materials) • <i>providers</i>: self-help/self-guided • <i>duration of treatment period and timing</i>: not specified • <i>description</i>: enhanced usual care: self-help materials for BP reduction and physician referral; brochure on BP control developed by National Heart, Lung, and Blood Institute, containing information about hypertension and suggestions for making lifestyle changes to reduce BP; with patients' permission, their BP readings were sent to their physicians, along with the two-page JNC 7 (joint national committee on prevention, detection, evaluation, and treatment of high blood pressure; JNC 7 report) reference card summarizing guidelines for the management of high BP; no group meetings • <i>compliance</i>: not specified for TAU group; n = 41/46 completed follow-up assessments (i.e., considered in per-protocol analysis) • <i>integrity of delivery</i>: not specified • <i>economic information</i>: \$125 for completing the trial • <i>theoretical basis</i>: not specified
Outcomes	<p>Outcomes collected and reported:</p> <ul style="list-style-type: none"> • SPB - automated device • DBP - automated device

Category	Extracted data
	<ul style="list-style-type: none"> • hostility - Cook-Medley Hostility Scale • burnout, emotional exhaustion - MBI • burnout, depersonalization - MBI • burnout, personal accomplishment - MBI • work strain, skill discretion - Karasek Job Content Questionnaire • work strain, decision-making authority - Karasek Job Content Questionnaire • work strain, job demands - Karasek Job Content Questionnaire • assertiveness, passive behavior - Personal Assertion Analysis (PAA) • assertiveness, aggressive - PAA • assertiveness, assertive - PAA • social support, belonging - Interpersonal Support Evaluation List (ISEL) • social support, appraisal - ISEL • social support, tangible - ISEL • ruminative responses, depressive rumination Ruminative Response Scale (RRS) • ruminative responses, reflection - RRS • ruminative responses, brooding - RRS • John Henryism • depression - CES-D • perceived stress - Perceived Stress Scale - not reported <p>Time points measured and reported: 1) pre-intervention; 2) 2-month follow-up (i.e., 2 months/approx. 60 days postintervention); blood pressure also assessed at screening (to test eligibility)</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: We contacted the authors to receive the means and SDs for perceived stress in both groups at each time point. We also asked for the means and SDs for all outcomes at 2-month follow-up (instead of change scores).; no response received to two inquiries</p> <p>Study start/end date: start of data collection in 2003; see trial registration: until August 2006</p> <p>Funding source: funding provided by NIH grant #HL67584 from the National Heart, Lung, and Blood Institute; funded with a Small Business Innovation Research (SBIR) grant from the National Institutes of Health (NIH) through Williams LifeSkills, Inc, Durham, North Carolina</p> <p>Declaration of interest: Redford B. Williams and Virginia P. Williams are founders and major stockholders in Williams LifeSkills, Inc. Their involvement in the project, as noted in the Methods section, was limited to treatment fidelity and initial training and initial supervision in the intervention. They also assisted in the editing of the manuscript. Otherwise, the design and conduct of the study, the data collection and analyses, and interpretation of results occurred independently of the developers of the intervention. The other authors have no conflicts to disclose.</p> <p>Ethical approval needed/obtained for study: approved by IRB at Columbia University Medical Center</p> <p>Comments by study authors: trial is registered at clinicaltrials.gov (Identifier NCT01262066)</p> <p>Miscellaneous outcomes by the review authors: not relevant</p> <p>Correspondence: Lynn P. Clemow, Department of Medicine, Center for Behavioral Cardiovascular Health, Columbia University Medical Center, New York, NY, USA; Department of Family and Community Medicine, Rutgers Robert Wood Johnson Medical School, New Brunswick, NJ, USA; clemowlp@rwjms.rutgers.edu</p>

Table D6.10

Duchemin 2015

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power sample size calculation, level of power achieved): not specified; small sample size as limitation</p> <p>Imputation of missing data: no missing data; intent-to-treat analysis</p>
Participants	<p>Country: USA</p> <p>Setting: large academic medical center (surgical intensive care unit (SICU))</p> <p>Age: mean = 44.2 years</p> <p>Sample size (randomized): 32</p> <p>Sex: 28 women, 4 men</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available at baseline: perceived stress (Perceived Stress Scale, PSS): 12% of participants with low stress (< 10), 37% with high stress (> 16); stress scale: 37% with cut-off value of stress > 14; burnout-emotional exhaustion (Maslach Burnout Inventory, MBI): 28% with cut-off score > 26; burnout-depersonalization: 7.78 (5.53); burnout-personal accomplishment: 36.5 (7.449)</p> <p>Population description: personnel, 18 years or older, from the SICU of a large academic medical center</p> <p>Inclusion criteria: 1) any personnel working in the SICU; 2) having contact with the patients or their families</p> <p>Exclusion criteria: 1) individuals practicing mindfulness, yoga, or exercising more than 30 minutes a day; 2) individuals with third trimester pregnancy; 3) individuals with a history of recent surgery if it limited ability to perform the gentle yoga movements</p> <p>Attrition (withdrawals and exclusions): no withdrawals or exclusions</p> <p>Reasons for missing data: not applicable since no missing data</p>
Interventions	<p>Intervention: workplace adapted mindfulness-based intervention (MBI) (<i>n</i> = 16)</p> <ul style="list-style-type: none"> • <i>delivery</i>: face-to-face group sessions; compact discs (CDs) provided to participants to facilitate daily practice • <i>providers</i>: delivered by M. Klatt, trained mindfulness and certified yoga instructor, who developed the MBI to be pragmatically performed in a work setting • <i>duration of treatment period and timing</i>: 8 weekly sessions; all sessions of 1-hour length except for week 5 (2 hours) that includes mindful eating; participants asked to perform 20-minute daily individual practice if possible • <i>description</i>: <ul style="list-style-type: none"> ○ combination of didactic introduction/discussion and combination of mindfulness and yoga practices with music at each session; protocol combines elements of mindfulness meditation, yoga movements, and relaxation through music ○ <i>CONTENT</i>: after introduction of the weekly theme/prompt, participants are led through a body scan, gentle stretching, yoga, progressive relaxation, and/or an eating meditation (for the two hour session), and then into formal meditation; each week a different topic is highlighted; music is standardized to be the same background music in each session, and in the background of each meditation practice contained on CDs • <i>compliance</i>: not specified • <i>integrity of delivery</i>: not specified

Category	Extracted data
	<ul style="list-style-type: none"> • <i>economic information</i>: intervention provided free of charge; work coverage assured for the participants during the time of the group sessions and assessments • <i>theoretical basis</i>: intervention is 8 weeks in length, paralleling the mindfulness-based-stress-reduction (MBSR) traditional program, with shortening of the group session duration for the setting; low-dose 8-week workplace adapted mindfulness-based intervention (MBI) (Klatt et al., 2009; Malarkey et al., 2013) <p>Control: wait-list control ($n = 16$)</p>
Outcomes	<p>Outcomes collected and reported:</p> <ul style="list-style-type: none"> • perceived stress - PSS • stress - stress scale of Depression Anxiety Stress Scale • burnout, emotional exhaustion - MBI • burnout, depersonalization - MBI • burnout, personal accomplishment MBI • compassion fatigue - Professional Quality of Life (ProQOL) - only correlations between ProQOL total score and other outcome variables reported • secondary traumatization - ProQOL - only correlations between ProQOL total score and other outcome variables reported • risk of burnout - ProQOL - only correlations between ProQOL total score and other outcome variables reported • mindfulness, observing - Five Facet Mindfulness Questionnaire (FFMQ) • mindfulness, describing - FFMQ • mindfulness, acting with awareness - FFMQ • mindfulness, non-judging of inner experience - FFMQ • mindfulness, non-reactivity to inner experience - FFMQ • salivary alpha amylase – Salivette® <p>Time points measured and reported: 1) pre-intervention (one week before intervention); 2) postintervention (one week after intervention)</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: We contacted authors to ask for the means and SDs for all outcomes for the two groups at pre- and postintervention and to inquire whether FFMQ and ProQOL were measured as outcomes or only correlates. Data for some outcomes were sent by the authors (perceived stress, DASS-21 stress, work stress, salivary alpha-amylase, work satisfaction) of whom not all were specified in the report (work satisfaction) (Klatt, 2018).</p> <p>Study start/end date: not specified</p> <p>Funding source: funded in part by the OSU Harding Behavioral Health Stress, Trauma and Resilience program</p> <p>Declaration of interest: none declared</p> <p>Ethical approval needed/obtained for study: approved by the university IRB, and all participants provided signed informed consent</p> <p>Comments by authors: not specified</p> <p>Miscellaneous outcomes by the review authors: conference abstract Klatt 2012 is a second reference to this study</p> <p>Correspondence: Anne-Marie Duchemin, Department of Psychiatry, The Ohio State University, 1670 Upham Drive, Columbus, Ohio 43210, USA; anne-marie.duchemin@osumc.edu; Tel: 614-293-5517, Fax: 614-293-7599</p>

Table D6.11

Fei 2019

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power & sample size calculation, level of power achieved): not specified</p> <p>Imputation of missing data: not specified</p>
Participants	<p>Country: China</p> <p>Setting: training sessions performed in a classroom of the hospital's teaching department</p> <p>Age: mean = 32.21 (SD = 6.48) years</p> <p>Sample size (randomized): 122</p> <p>Sex: not specified (unclear if also male nurses included)</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: perceived stress (Perceived Stress Scale, PSS): IG = 45.38 (5.15), CG = 45.13 (4.19); both groups above cut-off for high stress</p> <p>Population description: nurses from 3 Chinese tertiary hospitals</p> <p>Inclusion criteria: 1) full-time nurses; 2) signature of the employee's agreement with the hospital; 3) understanding of the objective of the intervention and voluntary participation in the study</p> <p>Exclusion criteria: 1) nursing student; 2) not wishing to participate; 3) severe organic disease; 4) taking medication for mood regulation; 5) have suffered major traumatic events in the last 6 months; 6) having experience in emotional resilience or similar training</p> <p>Attrition (withdrawals and exclusions): not specified</p> <p>Reasons for missing data: not specified</p>
Interventions	<p>Intervention: emotional resilience training ($n = 61$)</p> <ul style="list-style-type: none"> • <i>delivery</i>: <ul style="list-style-type: none"> ○ face-to-face group sessions: CHAT GROUP training based on talks, combined with variety of methods; researchers, experts and nurses participated in group ○ training methods: for example, experiential communication, role playing, cognitive behavioral correction methods, staging; individual interventions when, according to emotional records and chat group, particular psychological problems arose in a nurse • <i>providers</i>: not specified (see chat groups) • <i>duration of treatment period and timing</i>: 8 weekly 60-90-minute sessions (meetings on Tuesday afternoons); DAILY: participants asked to register their emotions • <i>description</i>: <ul style="list-style-type: none"> ○ CHAT GROUP: composed of researchers, experts and nurses organized to strengthen the emotional communication between them, understand the needs of nurses and suggestions for training, and recognize and quickly improve problems in the research process ○ SESSION 1: conceptualization of emotions; content: understand emotions, interpret the secrets of emotions ○ SESSION 2: recognition and evaluation of one's emotions; content: interpret the secrets of emotions and the effects of emotions on behaviors; positive and negative emotions involve mental and physical reactions

Category	Extracted data
	<ul style="list-style-type: none"> ○ SESSION 3: Rational Emotional Therapy I; content: Introduce the characteristics of irrational beliefs, describe and discuss irrational beliefs, challenge of 11 irrational beliefs ○ SESSION 4: Rational Emotional Therapy II; content: Introduce ABCDE theory (Activating event, Belief, Consequences, Dispute, Effects), the operational mechanism and emotional regulation method ○ SESSION 5: stress management I; content: Implement the role playing to experiment and understand the difficulties of the roles ○ SESSION 6: stress management II; content: prioritize and classify issues, say “no” to some people or things, and overcome anger and depression through different methods ○ SESSION 7: stress management III; content: achieve a reasonable catharsis adjustment, confidentiality of the consultation and “perfect” adjustment ○ SESSION 8: stress management IV; content: implement expiration relaxation method and pleasant meditation method ○ DAILY: participants asked to register their emotions daily; researchers collected, reviewed and corrected the daily records weekly, and provided suggestions, encouragement and guidance during the process • <i>compliance</i>: not specified • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>: not specified <p>Control: no intervention ($n = 61$)</p>
Outcomes	<p>Outcomes collected and reported:</p> <ul style="list-style-type: none"> • perceived stress - PSS • perceived stress, tension - PSS • perceived stress, loss of control - PSS • positive affect - Positive and Negative Affect Schedule (PANAS) • negative affect - PANAS • sleep quality total score - Pittsburgh Sleep Quality Index (PSQI) • sleep quality, sleep latency - PSQI • sleep quality, sleep duration - PSQI • sleep quality, sleep disorders - PSQI • sleep quality, hypnotics - PSQI • sleep quality, sleep efficiency - PSQI • sleep quality, subjective sleep quality - PSQI • sleep quality, daytime dysfunction - PSQI <p>Time points measured and reported: 1) pre-intervention; 2) postintervention</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: We contacted the authors to get the information whether $N = 122$ (61 in each group) were also analyzed for sleep quality and the respective subscales. In addition, we asked if there had been any dropouts/losses to follow-up in the study or if there were no missing data at all, but received no response to two inquiries.</p> <p>Study start/end date: not exactly specified; recruitment in December 2018</p> <p>Funding source: not specified</p> <p>Declaration of interest: not specified</p> <p>Ethical approval needed/obtained for study: approval of the ethics committees obtained</p> <p>Comments by study authors: not specified</p> <p>Miscellaneous outcomes by the review authors: article in Spanish (translated)</p>

Category	Extracted data
	Correspondence: Yang Fei, Yangtze University, Jingzhou, Hubei Province, 434023, China; cjdxxlx@sohu.com

Table D6.12

Gelkopf 2008

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power sample size calculation, level of power achieved): not specified, relatively small sample size</p> <p>Imputation of missing data: no imputation of missing data; per-protocol analysis (only participants who took part completely in allocated intervention)</p>
Participants	<p>Country: Sri Lanka</p> <p>Setting: local, nongovernmental, grassroots organization called Sumithrayo</p> <p>Age: mean = 48.65 (SD = 12.77) years</p> <p>Sample size (randomized): 62</p> <p>Sex: 46 women, 14 men (in analyzed sample)</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: not specified</p> <p>Population description: education and mental health volunteer workers who were involved in working with disaster survivors; had been working on-site giving immediate physical help (ranging from recovering and burying bodies to building camps and providing makeshift kitchens) as well as providing emotional support and counseling to survivors and their families</p> <p>Inclusion criteria: not specified</p> <p>Exclusion criteria: not specified</p> <p>Attrition (withdrawals and exclusions): 2/37 (5.4%) dropouts in IG</p> <p>Reasons for missing data: personal reasons ($n = 2$)</p>
Interventions	<p>Intervention: "Training the trainer" course based on ERASE (Enhancing Resiliency Among Students Experiencing Stress) Stress program ($n = 37$)</p> <ul style="list-style-type: none"> • <i>delivery</i>: face-to-face; group sessions; experiential exercises around traumatic experiences, skills training practices, simulations • <i>providers</i>: ERASE Stress workshop hosted by a local nongovernmental grassroots organization called Sumithrayo; providers of "training the trainer" course not specified • <i>duration of treatment period and timing</i>: 4-day, 30-hour intensive course over 2 weekends • <i>description</i>: <ul style="list-style-type: none"> ○ provides participants with opportunity to experience the 12 sessions of ERASE as if they were children themselves, as well as to explore ways to effectively deliver the program to children ○ based on 4 COMPONENTS: 1) processing the volunteer workers' personal and tsunami relief experiences; 2) enhancing trainers' coping skills and strengthening the group cohesiveness of the trainers; 3) providing trainers with trauma-related psychoeducational knowledge and techniques to enhance children's coping skills and resiliency strategies; 4) teaching trainers how to disseminate the knowledge and to apply the learned techniques within the school system and providing them with the opportunity to practice their training skills ○ relies on several EDUCATIONAL MODALITIES: 1) experiential exercises that demonstrate the same procedures that are to be implemented in the classroom with the students; 2) lectures that present the rationale of the entire program to the participants and the explanations for each topic to be presented to the students; 3) skills training practices that require the

Category	Extracted data
	<p>teachers to apply the skills themselves they would later deliver to students; 4) simulations of teaching by the participants</p> <ul style="list-style-type: none"> • <i>compliance</i>: $n = 2$ dropouts for personal reasons • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>: ERASE Stress program (universal school-based intervention geared at enhancing students' coping skills and resiliency strategies for dealing with traumatic stress); developed in Israel to help children cope with ongoing terrorism; incorporates psychoeducational materials, skills training, meditative practices, bioenergetic exercises, art therapy, and narrative techniques for reprocessing traumatic experiences (Berger et al., 2007) <ul style="list-style-type: none"> ○ SESSION 1 – GETTING STARTED: introducing group leaders, participants and the program; presenting an overview of the program ○ SESSION 2 – STRENGTHENING YOUR PERSONAL RESOURCES: identifying students' personal resource profiles and providing them with new coping skills; learning a model (the M-O-S-T B-A-S-I-C model) for enhancing their coping repertoire ○ SESSION 3 – INHABITING YOUR BODY: learning the role of the body and its function during stress, becoming aware of somatic reactions pertaining to stress, and developing sensory–motor strategies to control the body during stressful situations ○ SESSION 4 – KNOWING YOUR FEELINGS: enhancing students' emotional awareness, identifying and clarifying feelings, and becoming aware of the connections between sensations and feelings; learning various modalities to express feelings ○ SESSION 5 – CONTROLLING YOUR EMOTIONS WITH YOUR MIND: exploring relationships between sensations, thoughts, and feelings, and learning cognitive coping skills ○ SESSION 6 – DEALING WITH FEARS: normalizing fears and learning new ways to deal with them and to create an inner sense of safety ○ SESSION 7 – DEALING WITH ANGER AND RAGE: confronting anger and rage and expressing them in a controlled manner; learning and practicing assertiveness ○ SESSION 8 – COPING WITH GRIEF AND LOSS: exploring grief and loss experiences and providing an opportunity to express these feelings within a safe context ○ SESSION 9 – BUILDING A SOCIAL SHIELD: exploring social needs and ways to strengthen our support system; learning to ask for help and to become more emphatic ○ SESSION 10 – BOOSTING YOUR SELF-ESTEEM: exploring self-image and the way it affects our coping styles; learning to accept deficits and acknowledge strengths ○ SESSION 11 – TURNING CRISIS INTO OPPORTUNITY: becoming aware of negative thought patterns and learning how to reframe them positively ○ SESSION 12 – SEEKING A BETTER FUTURE: exploring future dreams and fantasies and learning how to build a plan toward achieving them; reviewing the program and providing an opportunity for closure ○ ERASE Stress found to be efficacious in reducing stress-related symptoms of children exposed to war and terrorism <p>Control: active control (Befriending seminar) ($n = 25$)</p>

Category	Extracted data
	<ul style="list-style-type: none"> • <i>delivery</i>: face-to-face; psychoeducational procedure (lectures and discussions) (rather than experiential exercises, skills training practices and simulations in IG) • <i>providers</i>: administered by the same local organization that had sponsored the ERASE Stress program; led by local psychologists and social worker • <i>duration of treatment period and timing</i>: 32-hour seminar conducted over 2 weekends • <i>description</i>: <ul style="list-style-type: none"> ○ aims at giving tools for emotional support to volunteers working at Sumithrayo; includes lectures and interactive discussions on providing emotional support and emphatic listening, conflict resolution, processing traumatic experiences, parenting, drug abuse, and suicide prevention; experiential exercises aimed at enhancing group cohesiveness and empowering the participants; throughout the seminar, the precepts of cooperation, communication, affirmation and acceptance are explained and exercised ○ compared to IG: NO focus on personal tsunami relief experience of participants; NO provision of specific trauma-related knowledge and techniques for enhancing children's resiliency; addressed issues such as drug abuse and suicide prevention (in contrast to IG) • <i>compliance</i>: no dropout • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>: standard seminar given to many of Sumithrayo volunteers; Ellawala (2004)
Outcomes	<p>Outcomes collected and reported:</p> <ul style="list-style-type: none"> • personal optimism - single item modified from Children's Future Orientation Scale • personal sense of self-efficacy - single item • professional self-efficacy - Disaster-Helper Self-Efficacy Scale • sense of mastery - Mastery Scale • cognitive coping strategy, self-blame - Cognitive Emotion Regulation Questionnaire (CERQ) • cognitive coping strategy, acceptance - CERQ • cognitive coping strategy, rumination - CERQ • cognitive coping strategy, positive refocusing - CERQ • cognitive coping strategy, refocusing on planning - CERQ • cognitive coping strategy, positive reappraisal - CERQ • cognitive coping strategy, putting into perspective - CERQ • cognitive coping strategy, catastrophizing - CERQ • cognitive coping strategy, blaming others - CERQ <p>Time points measured and reported: 1) pre-intervention; 2) postintervention</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: We contacted authors to get the information of the mental health volunteers included in the study were health care professionals and if the authors could provide the summary outcome data only for this subgroup (Gelkopf, 2019).</p> <p>Study start/end date: not specified</p> <p>Funding source: financial support by the Silverton Foundation</p> <p>Declaration of interest: not specified</p> <p>Ethical approval needed/obtained for study: not specified</p> <p>Comments by authors: not specified</p>

Category	Extracted data
	<p>Miscellaneous outcomes by the review authors: not relevant</p> <p>Correspondence: Marc Gelkopf; Lev Hasharon Mental Health Center, POB 9000, Netanya 42100, Israel; emgelkopf@013.net.il</p>

Table D6.13

Hosseinnejad 2018

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power & sample size calculation, level of power achieved): priori sample size calculation (95% CI, 80% power) revealed required sample size of 40 in each group</p> <p>Imputation of missing data: not specified</p>
Participants	<p>Country: Iran</p> <p>Setting: nursing personnel from Shafa Hospital; training setting not specified</p> <p>Age: range = 24-45 years</p> <p>Sample size (randomized): 80</p> <p>Sex: 73 women, 7 men</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: not specified</p> <p>Population description: nursing personnel from Shafa Hospital</p> <p>Included criteria: 1) male and female nurses working in Shafa Hospital in Rasht; 2) with work experience of between 1 and 30 years; 3) with a minimum undergraduate degree; 4) 22–60 years old (see also trial registration)</p> <p>Excluded criteria: 1) nurses who did not have the opportunity to take part in the research; 2) persons who could not attend at least 2 sessions of resilience training; 3) nurses with a high resilience score (Connor-Davidson Resilience Scale, CD-RISC) (see also trial registration)</p> <p>Attrition (withdrawals and exclusions): not specified</p> <p>Reasons for missing data: not specified</p>
Interventions	<p>Intervention: resiliency skills training course ($n = 40$)</p> <ul style="list-style-type: none"> • <i>delivery</i>: face-to-face; group setting • <i>providers</i>: researcher • <i>duration of treatment period and timing</i>: 10 sessions (each 45 minutes); 2 weekly sessions (overall 5 weeks); repetitive session held for each session in the same week to ensure that participants who could not attend main meeting (e.g., due to shift work) were able to participate in the training session • <i>description</i>: <ul style="list-style-type: none"> ○ SESSION 1: a) providing information, explaining study objectives and familiarizing participants with each other; b) target: 1. introducing the presenter and participants; 2. statement of purpose, rules and framework of the group 3. completion of questionnaire; providing definition of resilience and importance and presenting related tasks ○ SESSION 2: a) strengthening self-confidence and self-reliance; b) target: 1. simple and clear definition of self-awareness; 2. expressing the components of self-awareness; 3. identifying the strengths and weaknesses; 4. introduction to the concept of optimism and its effect on self-esteem; 5. clear understanding of self-confidence; 6. effective on strengthening self-esteem; 7. importance and effect of self-esteem in life; 8. techniques to increase self-confidence; 9. pre-session review assignments and presenting new assignments ○ SESSION 3: a) managing emotions and emotions; b) target: 1. recognize their emotions; 2. awareness of their emerging performance; 3. ability to change emotions through changing

Category	Extracted data
	<p>beliefs; 4. assessment of prior assignments and presentation of new assignments</p> <ul style="list-style-type: none"> ○ SESSION 4: a) coping with stress; b) target: 1. express the concept of stress; 2. stress coping methods; 3. assessment of pre-assignments and presenting new assignments ○ SESSION 5: a) anger management; b) target: 1. expressing the concept of anger; 2. presenting the causes and consequences of anger; 3. Recognizing the feeling of anger in itself; 4. anger management and anger management techniques; 5. assessment of pre-assignments and new assignments ○ SESSION 6: a) effective communication; b) target: 1. familiarity with the communication process; 2. correct and correct communication with colleagues and clients ○ SESSION 7: a) problem-solving; b) target: 1. understanding problem solving steps; 2. how to apply and apply problem solving; 3. pre-assessment assignments and presenting new assignments ○ SESSION 8: a) decision-making; b) target: 1. the right criteria for a good decision; 2. the importance and value of a right decision; 3. predicting the consequences and consequences of the decisions ○ SESSION 9: a) targeting and how to achieve the goal and the future; b) target: 1. express a simple concept of purpose and its types; 2. importance of goal-setting and planning for success in life; 3. training and practical training of goal-setting and planning; 4. assignment ○ SESSION 10: a) review and summary; b) target: 1. summarizing the contents of all sessions; 2. responding to participants' questions; 3. completing the questionnaire <ul style="list-style-type: none"> • <i>compliance</i>: not specified • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>: not specified <p>Control: TAU ($n = 40$)</p> <ul style="list-style-type: none"> • <i>description</i>: routine program • no other information specified
Outcomes	<p>Outcomes collected and reported:</p> <ul style="list-style-type: none"> • satisfaction with future career - Copenhagen Psychosocial Questionnaire (COPSOQ) • satisfaction with physical working conditions - COPSOQ • satisfaction with use of empowerment -COPSOQ • job satisfaction - COPSOQ • satisfaction with job as whole - COPSOQ <p>Time points measured and reported: 1) pre-intervention; 2) 1-month follow-up (1-month postintervention)</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: We contacted the authors to get the information about potential missing data (withdrawals/exclusions) in the study and if the assessment took only place at pre-intervention and one month after end of treatment or also at 3-month follow-up (as specified in trial registration). In addition, we asked for the means and SDs of job satisfaction in the two groups at each time point with the number of participants analyzed and more details about the content of the routine program in the CG.; no response to two inquiries</p> <p>Study start/end date: see trial registration: expected recruitment start date: 23 October 2017; expected recruitment end date: 22 November 2017</p>

Category	Extracted data
	<p>Funding source: see trial registration: University of Social Welfare and Rehabilitation as sponsor</p> <p>Declaration of interest: no conflict of interest declared</p> <p>Ethical approval needed/obtained for study: ethics committee license obtained from University of Social Welfare and Rehabilitation Sciences</p> <p>Comments by study authors: trial registration: IRCT2017091636207N1 (Registered in Guilan University of Medical Sciences Healing Hospital and for cooperation with Nursing Officers and Practitioners)</p> <p>Miscellaneous outcomes by the review authors: article in Persian (translated)</p> <p>Correspondence: Fatemeh Hosseinnejad (MSc); corresponding author: Narges Arsalani (PhD), Department of Nursing, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran; nargesarsalani@gmail.com</p>

Table D6.14

Ireland 2017

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power & sample size calculation, level of power achieved): not specified; sample size was a weakness of the current study and possibly precluded several simple effects from reaching conventional levels of significance</p> <p>Imputation of missing data: not applicable since there were no withdrawals or exclusions</p>
Participants	<p>Country: Australia</p> <p>Setting: medical interns from large hospital emergency department; exact training setting not specified</p> <p>Age: mean = 26.88 (SD = 4.79, range = 22-48) years</p> <p>Sample size (randomized): 44</p> <p>Sex: 28 women, 16 men</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: burnout (Copenhagen Burnout Inventory, CBI): IG = 2.55 (0.52), CG = 2.65 (0.75)</p> <p>Population description: intern doctors completing their practicum rotation in the emergency department of a major metropolitan hospital</p> <p>Included criteria: not specified</p> <p>Excluded criteria: not specified</p> <p>Attrition (withdrawals and exclusions): information received from authors (Ireland, 2019): no withdrawals or exclusions; all participants stayed in the trial for the full length of time</p> <p>Reasons for missing data: not applicable since there were no withdrawals or exclusions</p>
Interventions	<p>Intervention: Mindfulness training program (for participants named as 'resiliency and mindfulness program') ($n = 23$)</p> <ul style="list-style-type: none"> • <i>delivery</i>: face-to-face; training workshops probably group setting) • <i>providers</i>: not specified • <i>duration of treatment period and timing</i>: 10 weekly 1-hour sessions • <i>description</i>: <ul style="list-style-type: none"> ○ mix mindfulness education and practice; adapted from well-validated psychological treatment programs (Mindfulness-Based Stress Reduction (MBSR), Mindfulness-Based Cognitive Therapy (MBCT), and Acceptance and Commitment Therapy (ACT)); adaptations necessary to make material applicable for non-clinical population ○ 10 SESSIONS: (1) introducing mindfulness, (2) everyday awareness and automatic pilot, (3) barriers to being mindful, (4) mindfulness of breathing theory and activities, (5) staying present at work and daily like, (6) letting go of sensations and emotions, (7) the nature of thoughts, (8) self-care, (9) applying what has been taught, and (10) review ○ Each session covered theoretical content contained in other intervention programs (MBSR; MBCT, ACT) and, when time permitted, included common mindfulness exercises (mindfulness of breathing, mindfulness of the body, mindfulness of eating, etc.). ○ participants encouraged to practice regularly outside of the sessions

Category	Extracted data
	<ul style="list-style-type: none"> • <i>compliance</i>: not specified • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>: adapted from well-validated psychological treatment programs (MBSR, MBCT, ACT) <p>Control: active control ($n = 21$)</p> <ul style="list-style-type: none"> • <i>duration of treatment period and timing</i>: 1 hour per week for 10 weeks • <i>description</i>: extra hour break time in the middle of the day • <i>compliance</i>: not specified
Outcomes	<p>Outcomes collected and reported:</p> <ul style="list-style-type: none"> • perceived stress - Perceived Stress Scale • burnout - (CBI) <p>Time points measured and reported: 1) pre-intervention; 2) during intervention (week 5 of 10-week intervention); 3) postintervention (in final session, i.e., week 10)</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: We contacted the authors to get the information about possible withdrawals/exclusions in the two groups and the number of participants analyzed in each group (Ireland, 2019).</p> <p>Study start/end date: not specified</p> <p>Funding source: not specified</p> <p>Declaration of interest: The authors report no conflicts of interest. The authors alone are responsible for the content and writing of this article.</p> <p>Ethical approval needed/obtained for study: ethics approval through the host institution</p> <p>Comments by study authors: not specified</p> <p>Miscellaneous outcomes by the review authors: information received from authors (Ireland, 2019): There were no withdrawals or exclusions.; number of participants analyzed in each group: full sample as reported in the article; all participants stayed in the trial for the full length of time</p> <p>Correspondence: Michael J. Ireland, School of Psychology and Counselling, University of Southern Queensland, PO Box 4196, Springfield Central, Queensland 4300, Australia; Michael.Ireland@usq.edu.au</p>

Table D6.15

ISRCTN69644721

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power sample size calculation, level of power achieved): not specified in trial registration</p> <p>Imputation of missing data: not specified</p>
Participants	<p>Country: UK</p> <p>Setting: 4 Mind sites: Peterborough and Fenland, Tyneside, Wirral, or London (City, Hackney and Waltham Forest)</p> <p>Age: not specified</p> <p>Sample size (randomized): 255 (targeted)</p> <p>Sex: not specified</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: not specified</p> <p>Population description: adults aged 18 to 67 years old who work in 1 of the 4 emergency services: police, fire and rescue, ambulance, and search and rescue</p> <p>Inclusion criteria: 1) adults aged 18 to 67 years old; 2) fluent in English; 3) work in 1 of the 4 emergency services: police, fire and rescue, ambulance, and search and rescue</p> <p>Exclusion criteria: Participants who were depressed or suffering from post-traumatic stress disorder and who required treatment for these conditions.</p> <p>Attrition (withdrawals and exclusions): not specified</p> <p>Reasons for missing data: not specified</p>
Interventions	<p>Intervention 1: new resilience intervention (n not specified)</p> <ul style="list-style-type: none"> • <i>delivery</i>: online (digital modules) and face-to-face (group sessions); individual and group setting • <i>providers</i>: group sessions provided at local Mind centers • <i>duration of treatment period and timing</i>: <ul style="list-style-type: none"> ○ 4 weeks in total ○ each week participant completes one 15/20-minute digital module ○ 4 weekly 2-hour group sessions with break • <i>description</i>: <ul style="list-style-type: none"> ○ DIGITAL MODULES: 4 digital modules covering 4 main topics linked to maintaining resilience (attention training, dwelling, dealing with difficult emotions, transforming worry) ○ GROUP SESSIONS: cover experiential exercises, work in pairs and group discussion; cover main topics linked to maintaining resilience • <i>compliance</i>: not specified • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>: no theoretical foundation specified <p>Intervention 2: digital-only intervention (n not specified)</p> <ul style="list-style-type: none"> • <i>delivery</i>: online (reading material) • <i>providers</i>: self-guided • <i>duration of treatment period and timing</i>: 4 weeks; weekly 30-minute online modules per week • <i>description</i>: reading material about mental health and wellbeing • <i>compliance</i>: not specified • <i>integrity of delivery</i>: not specified

Category	Extracted data
	<ul style="list-style-type: none"> • <i>economic information</i>: not specified • <i>theoretical basis</i>: not specified <p>Control: wait-list control (n not specified; receive new resilience intervention 4 months later)</p>
Outcomes	<p>Outcomes collected and reported:</p> <p><i>Primary outcome</i></p> <ul style="list-style-type: none"> • well-being - Warwick Edinburgh Mental Wellbeing scale and ONS (Office for National Statistics) well-being questions (item 1) • mindful attention - Mindful Attention and Awareness Scale <p><i>Secondary outcome</i></p> <ul style="list-style-type: none"> • general health - General Health Questionnaire-12 • resilience - statements about resilience • life satisfaction - statements about life satisfaction • awareness of mental health management tools - questions about knowledge of mental health management tools • rumination - statements about dwelling • depression - Patient Health Questionnaire-9 • anxiety - Generalized Anxiety Disorder 7 <p>Outcomes reported not specified</p> <p>Time points measured and reported: 1) pre-intervention; 2) postintervention; 3) 3-month Follow-up (3 months postintervention); time points reported not specified</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: We contacted the authors to get the information if the trial was completed and published and if the authors could provide the summary outcome data for the two groups (Wild, 2018).</p> <p>Study start/end date: October 2016 – April 2017</p> <p>Funding source: University of Oxford; Mind, the mental health charity (UK)</p> <p>Declaration of interest: not specified</p> <p>Ethical approval needed/obtained for study: approved by Medical Sciences Inter-Divisional Research Ethics Committee, 14 October 2016, ref: R47862/RE001</p> <p>Comments by authors: not specified</p> <p>Miscellaneous outcomes by the review authors: information received from authors (Wild, 2018): trial completed but unpublished; study conducted at 4 Mind centers in Peterborough and Fenland, Tyneside, Wirral, or London</p> <p>Correspondence: Dr. Jennifer Wild (primary contact), Department of Experimental Psychology, University of Oxford, South Parks Road, Oxford, OX1 3UD, United Kingdom; Jennifer.wild@psy.ox.ac.uk</p>

Table D6.16

Khoshnazary 2016

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power & sample size calculation, level of power achieved): not specified</p> <p>Imputation of missing data: no imputation of missing data; per-protocol analysis (i.e., only participants who completed the study, excluding the 3 withdrawals in the IG)</p>
Participants	<p>Country: Iran</p> <p>Setting: nurses in a psychiatric department; training setting not specified (probably at home, in part, due to written training)</p> <p>Age: range = 24-55 years</p> <p>Sample size (randomized): 76</p> <p>Sex: 51 women, 22 men (after 3 withdrawals)</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: not specified</p> <p>Population description: nurses in psychiatric department</p> <p>Inclusion criteria: 1) providing consent to take part in the study; 2) having a bachelor's degree or higher; 3) working morning, evening or night shifts at Roozbeh Psychiatric Hospital; 4) having at least 1 year experience at Roozbeh Psychiatric Center; 5) no emotional intelligence training experience</p> <p>Exclusion criteria: 1) failure to participate and to participate appropriately in emotional intelligence training; 2) boredom or illness that prevented participation or continued collaboration at the time of the study; 3) moving to another center; 4) incomplete completion of questionnaire or failure to return the questionnaire during the procedure; 5) psychosocial problems; 6) use of drugs</p> <p>Attrition (withdrawals and exclusions): 3 withdrawals in IG</p> <p>Reasons for missing data: not specified</p>
Interventions	<p>Intervention: emotional intelligence training ($n = 38$)</p> <ul style="list-style-type: none"> • <i>delivery</i>: combination: face-to-face, probably group setting (workshop) + written training (educational pamphlets) • <i>providers</i>: not specified for workshop • <i>duration of treatment period and timing</i>: 1-day workshop of 7 hours + written training for 6 weeks with educational pamphlets • <i>description</i>: <ul style="list-style-type: none"> ○ 1-DAY WORKSHOP: <ul style="list-style-type: none"> ▪ familiarizing with history, defining emotional intelligence and how to apply it in the workplace, family environment and relations to people around ▪ workshop teaches 3 skills out of 15 emotional intelligence (EI) enhancing skills ○ 6-WEEK WRITTEN TRAINING to follow internalization of skills through educational pamphlets about Bar-On emotional intelligence skills <ul style="list-style-type: none"> ▪ each week: follow-up of 2 of the 15 EI skills (problem-solving, happiness, optimism, stress tolerance, impulse control, flexibility, realism/reality testing, independence, empathy, interpersonal relationships, social responsibility, emotional self-awareness, self-esteem/assertiveness, self-healing/self-actualization, self-expression/self-regard) are given along with exercises to develop and reinforce these skills

Category	Extracted data
	<ul style="list-style-type: none"> • <i>compliance</i>: $n = 3/38$ withdrawals • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>: not specified <p>Control: not specified ($n = 38$)</p> <ul style="list-style-type: none"> • <i>description</i>: In case of effective training, all training content should be presented to CG in one CD.
Outcomes	<p>Outcomes collected and reported:</p> <ul style="list-style-type: none"> • emotional intelligence - BarOn Emotional Quotient Inventory • resilience - Connor-Davidson Resilience Scale <p>Time points measured and reported: 1) pre-intervention; 2) postintervention</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: no correspondence required</p> <p>Study start/end date: not exactly specified; recruitment in 2014</p> <p>Funding source: not specified</p> <p>Declaration of interest: not specified</p> <p>Ethical approval needed/obtained for study: approved by Ethics Committee of University of Social Welfare and Rehabilitation Sciences (code: 8.4931.IR.USWR.REC)</p> <p>Comments by study authors: article is the result of a Master's Degree in Nursing at the University of Social Welfare and Rehabilitation Sciences</p> <p>Miscellaneous outcomes by the review authors: article in Persian (translated)</p> <p>Correspondence: S. Khoshnazary; corresponding author: M. A. Hosseini, PhD, Associate Professor, Nursing Department, University of Social Welfare & Rehabilitation Sciences, Tehran, Iran; mahmaimy2020@gmail.com</p>

Table D6.17

Klatt 2015

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power sample size calculation, level of power achieved): not specified</p> <p>Imputation of missing data: not specified</p>
Participants	<p>Country: USA</p> <p>Setting: intensive care units (ICUs)</p> <p>Age: see Population description; age not specified</p> <p>Sample size (randomized): 34 (information received from authors; Klatt, 2019)</p> <p>Sex: not specified</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: not specified</p> <p>Population description: employees at ICUs</p> <p>Inclusion criteria: not specified</p> <p>Exclusion criteria: not specified</p> <p>Attrition (withdrawals and exclusions): not specified</p> <p>Reasons for missing data: not specified</p>
Interventions	<p>Intervention: Mindfulness in Motion (MIM) ($n = 17$; information received from authors; Klatt, 2019)</p> <ul style="list-style-type: none"> • <i>delivery</i>: face-to-face (Modified mindfulness-based intervention (MBI) specific for onsite delivery, Yoga movement is done standing or seated, music in background); power-point presentation, mind-body relaxation; delivery at work • <i>providers</i>: M. Klatt (developer of MIM protocol in this study; trained yoga instructor (Yoga Alliance Certified) and attendee at an Mindfulness Based Stress Reduction (MBSR) 9 day training for Health Professionals (M. Klatt has additionally designed a train-the-trainer program for others with previous yoga/mindfulness training in order to scale its delivery) • <i>duration of treatment period and timing</i>: 8 weekly 1-hour sessions plus one 2-hour “retreat”); 20 minutes daily homework • <i>description</i>: <ul style="list-style-type: none"> ○ MIM teaches mindful awareness principles, rehearses mindfulness as a group, emphasizes the use of gentle yoga stretches, utilizes unique relaxing music in the background of group sessions/ individual practice, and requires daily individual mindfulness practice. ○ The weekly session’s content and structure follow that of the traditional MBSR, with an increased emphasis on bodily relaxation with the soft background music preceding the discussion of mindful awareness of cognitive habits. ○ Participants receive three daily practice compact discs (CDs) (with 20 min practice tracks) and one yoga digital versatile disk (DVD) with the background music and similar meditations as the ones practiced as a group, to be utilized for individual practice. ○ same format for weekly 1h sessions: <ul style="list-style-type: none"> ▪ 1. Begin each session by asking participants to count their respiration by placing their right hand on their chest and counting only inhales for 30 sec as timed by the instructor. Ask each participant to record their breath count on a log provided.

Category	Extracted data
	<ul style="list-style-type: none"> ▪ 2. Play relaxing music in the background to set the climate for MIM. ▪ 3. State that the intent of the didactic/experiential sessions is to encourage the explicitly defined objective of the program: resiliency building and stress reduction through mindful awareness of habitual patterns of stress reactivity. ▪ 4. Each week, deliver a prompt for contemplation during the next hour and assure the participants that the response to the prompt is personal and silent. Invite the participants to choose to share responses, without any pressure to verbalize personal reflections. The prompts directly relate to each weekly theme ▪ 5. Deliver a 15 min Powerpoint presentation on topics including stress and work-related stress, theoretical material related to mindfulness, the somatic mind/body connection, relaxation, yoga, meditation, self-awareness, and bodily cues relating to emotional reactivity and the relation of these topics to the specific workplace stressors. ▪ 6. Following the prompt, lead the participants through a mind body relaxation relating to the weekly prompt ▪ 7. End each session by asking each participant to count their respirations for 30 sec and record their individual end-of-weekly-session breath count in the log provided; homework assignments <ul style="list-style-type: none"> • <i>compliance</i>: intervention well received with 97% retention rate • <i>integrity of delivery</i>: not specified • <i>economic information (intervention cost, changes in other costs as result of intervention)</i>: Other shift nurses were paid to come in an hour before their normal start time so that the MBI participant's patients were cared for by experienced nurses • <i>theoretical basis</i>: <ul style="list-style-type: none"> ○ MBSR: stress reduction intervention that can be used to retrain the mind to change its usual responses to stressful situations; teaches non-reactive awareness of one's affective response to external events and is presented as the key to changing one's internal experience of stress ○ Mindfulness is characterized by non-judgmental, sustained moment-to-moment awareness of physical sensations, perceptions, affective states, thoughts and imagery ○ MIM is offered as a modified, less time intensive method to be delivered in the work place, and intends to enable busy working adults to experience the benefits of mindfulness. ○ Development of MIM protocol based on previous studies that suggest the efficacy of mindfulness interventions do not correlate with the length of time spent on the group didactic practice (Carmody & Baer, 2009; Jha et al., 2010; Klatt et al., 2009) and yield similar results to the longer traditional MBSR. ○ The self-reflection and awareness, and the shared experience of the emerging self-awareness, may contribute to a climate/culture change in a highly stressed work environment. ○ Bishop et al. (2004) generated a functional definition of mindfulness for researchers concerning the role and essential elements of an MBI. Two critical components were determined to be (1) self-regulation of attention and (2) the adoption of an

Category	Extracted data
	<p>orientation toward one's experiences in the present moment (Bishop et al., 2004). MIM, the onsite MBI protocol described in this manuscript was constructed to retain the essential elements of mindfulness, as it was conceived and has developed in traditional MBSR (Kabat-Zinn, 1982, 1990), while adapting it in a pragmatic way for working adults. It utilizes the operational definition of mindfulness, yet, differs in the worksite location of the intervention, and the weekly time commitment of the group meeting and individual "homework" suggestion.</p> <p>Control: wait-list control ($n = 17$; information received from authors; Klatt, 2019)</p>
Outcomes	<p>Outcomes collected and reported:</p> <ul style="list-style-type: none"> • resiliency - Connor-Davidson Resiliency Scale • work engagement, vigor - Utrecht Work Engagement Scale (UWES) • work engagement, dedication - UWES • work engagement, absorption - UWES • breath counts (only in IG) <p>Time points measured and reported: 1) pre-intervention (one week before the intervention); 2) postintervention (one week after last session)</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: We contacted authors to ask for the number of participants allocated to and analyzed in each group as well as the means and SD for resiliency for the two groups at each time point. In addition, we inquired whether the authors performed an intent-to-treat analysis. We received the information concerning the number of participants in each group from the authors (Klatt, 2019)</p> <p>Study start/end date: not specified</p> <p>Funding source: financial contributions to the project by the following entities at the Ohio State University: Stress, Trauma, and Resilience (STAR) Program, Health System Administration, Critical Care Nursing, and the Faculty Associates Program through the Women's Place</p> <p>Declaration of interest: Subsequent to the completion of this research conducted at the Ohio State University, Dr. Klatt has served as a consultant to Mindful Management, Limited Liability Company to whom The Ohio State University has licensed the rights of the individual practice CD/DVD; all other authors have nothing to disclose.</p> <p>Ethical approval needed/obtained for study: IRB approval from The Ohio State University</p> <p>Comments by authors: not specified</p> <p>Miscellaneous outcomes by the review authors: information received from authors: 17 participants in each group (Klatt, 2019)</p> <p>Correspondence: Maryanna Klatt, Department of Family Medicine, The Ohio State University College of Medicine; Maryanna.Klatt@osumc.edu</p>

Table D6.18

Lebares 2018

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power & sample size calculation, level of power achieved): study was not powered to detect statistically significant inter-group differences and comprises a convenience sample; consistent with recommendations for pilot trials, no focus on statistical power but use of linear mixed-effects modeling (ANCOVA) for multivariate analysis, with baseline scores as a covariate; of relevance to future trials, power calculations suggest that a sample size of 40 participants in a 2-group comparison will have 80% power to detect an effect size expressed as partial η^2 of 0.17</p> <p>Imputation of missing data: no imputation of missing data; no missing data reported for majority of outcomes; 2 excluded from functional magnetic resonance imaging (fMRI) analysis</p>
Participants	<p>Country: USA</p> <p>Setting: postgraduate year 1 surgery residents at University of California, San Francisco; training setting not specified</p> <p>Age: mean = 28.3 (SD = 2.4) years</p> <p>Sample size (randomized): 21</p> <p>Sex: 8 women, 13 men</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: burnout (abbreviated Maslach Burnout Inventory, aMBI): IG = 23.92 (6.83), CG = 25.33 (7.62); depression (Patient Health Questionnaire, PHQ-9): IG = 1.67 (1.56), CG = 0.89 (0.93)</p> <p>Population description: first-year surgery residents</p> <p>Inclusion criteria: 1) postgraduate year 1 surgery residents at University of California, San Francisco (UCSF); 2) without a current mindfulness meditation practice; 3) who provided written and oral informed consent</p> <p>Exclusion criteria: 1) previous experience with mindfulness practice; 2) chronic inflammatory illness; 3) current pregnancy</p> <p>Attrition (withdrawals and exclusions): 0 lost to follow-up in IG and 0 withdrew from CG; 1 participant initially assigned to CG mistakenly attended first IG sessions and finally participated in IG. 2 excluded from fMRI analysis</p> <p>Reasons for missing data: implanted metal, protocol glitch ($n = 2$ exclusions from fMRI analysis)</p>
Interventions	<p>Intervention: Modified Mindfulness-based Stress Reduction (modMBSR) ($n = 11$; after $n = 1$ participant assigned to CG mistakenly attended first IG session and finally participated in IG; $n = 12$)</p> <ul style="list-style-type: none"> • <i>delivery</i>: face-to-face; group setting (classes of 9-12 participants) • <i>providers</i>: instructor formally trained in Mindfulness-Based Stress Reduction (MBSR; by John Kabat-Zinn); with more than 10 000 hours of personal meditation practice, and more than 10 years of experience as an MBSR teacher • <i>duration of treatment period and timing</i>: <ul style="list-style-type: none"> ○ 8 weekly 2-hour classes (orientation and week 1 combined; preserved in-class experiential time, shortened discussions and didactics, no break compared to traditional MBSR) ○ 2-2 to 3-hour “mindfulness hike” (replaced mindfulness retreat in traditional MBSR) offered weeks 6 and 7 ○ daily practice of 20 minutes; debrief dinner at 12-month follow-up

Category	Extracted data
	<ul style="list-style-type: none"> • <i>description</i>: <ul style="list-style-type: none"> ○ AS IN TRADITIONAL MBSR: focus of sessions on experiential training including formal (body awareness, yoga, and sitting meditation), and informal (walking meditation, transition breathing, momentary) mindfulness practices; remaining time filled with didactics and group activities embodying principles discussed in class; “mindfulness hike” in local nature ○ CLASS CONTENT: shorter group discussion and didactics; EMPHASIS: building a skill set for stress resilience in medicine ○ CONTEXTUALIZATION: specific application of concepts and skills to professional situations (i.e., mindful communication with nurses and consultants, breathing techniques for operating room stress and mindful walking on rounds) ○ EXPECTATION: daily practice is a matter of ritual and discipline; it may be partly or largely informal due to reality of daily obligations • <i>compliance</i>: $n = 0$ withdrew; $n = 12$ received intervention with MBSR as randomized • <i>integrity of delivery</i>: not specified • <i>economic information</i>: no financial compensation for participants • <i>theoretical basis</i>: <ul style="list-style-type: none"> ○ Mindfulness-based stress reduction (MBSR; Kabat-Zinn, 2013) ○ mindfulness meditation training involves cultivation of moment-to-moment awareness of thoughts, emotions, and sensations (also known as interoception, Johnson et al., 2014; Kok & Singer, 2017) ○ development of non-reactivity in response to stimuli (also known as emotional regulation), and the enhancement of perspective-taking regarding oneself and others (Hölzel et al., 2011; Ricard et al., 2014) ○ most scientifically studied form of mindfulness training is the secular MBSR; MBSR used because it is secular, codified, and the most scientifically studied mindfulness-based intervention to day <p>Control: attention control ($n = 10$; after $n = 1$ participant assigned to CG mistakenly attended first IG session and finally participated in IG; $n = 9$)</p> <ul style="list-style-type: none"> • <i>delivery</i>: face-to-face; group setting • <i>providers</i>: not specified • <i>duration of treatment period and timing</i>: similar protected class time, home practice requirements and retreat-hike format than IG • <i>description</i>: <ul style="list-style-type: none"> ○ different content, same structure; shared reading and listening model used in WEEKLY DISCUSSIONS: of articles on topics, such as perseverance, complications, honesty, and death, exploring self-care and the ethos of surgery ○ DAILY PRACTICE: any self-determined self-care activity ○ RETREAT HIKE: focus on the relaxing properties of nature • <i>compliance</i>: $n = 0$ withdrew; $n = 9$ received CG as randomized; $n = 1$ did not receive intervention as randomized (attended incorrect training class and finally participated in IG) • <i>integrity of delivery</i>: not specified • <i>economic information</i>: no financial compensation for participants • <i>theoretical basis</i>: not specified
Outcomes	<p>Outcomes collected and reported:</p> <ul style="list-style-type: none"> • perceived stress - Perceived Stress Scale • mindfulness - Cognitive and Affective Mindfulness Scale–Revised

Category	Extracted data
	<ul style="list-style-type: none"> • resilience - Block Ego-Resilience scale • Grit - Short Grit Scale • burnout - aMBI • depression - PHQ-9 • executive function, working memory - National Institutes of Health Executive Abilities (NIH-EXAMINER) • executive function, executive composite- NIH-EXAMINER • executive function, cognitive control - NIH-EXAMINER • executive function, fluency - NIH-EXAMINER • motor skills, peg transfer - Fundamentals of Laparoscopic Surgery (FLS) • motor skills, circle cutting - FLS • changes in neural substrates in emotion regulation task (cognitive reappraisal) (blood oxygen level-dependent fMRI) <p>Time points measured and reported: information in part received from authors (Lebares, 2019): 1) pre-intervention (before start of internship/intern year; always mid-June); 2) postintervention (information from authors: within one week of the end of training/3.5 months after baseline, i.e., 8-week training approx. 1.5 months after baseline during internship); 3) approx. 8.5-month follow-up (approx. 12 months after baseline in May of the following year; i.e., 8.5 months after end of training which took place at 3.5 months after baseline)</p> <p>Adverse events: no adverse patient events reported in association with study participation</p>
Notes	<p>Contact with authors: We contacted the authors to get more information about the assessments (time 2 immediately postintervention, but 1.5 months after training/3.5 months after baseline; time 3 at 10 months after end of training/12 months after baseline?) and the number of participants analyzed for the psychological outcomes (see different information in two flow diagrams of reports) (Lebares, 2019).</p> <p>Study start/end date: data collection from June 2016 –June 2017; data analysis from June 2017 to December 2017</p> <p>Funding source: LEBARES 2018: Ms. Desai was supported by National Institutes of Health grant R25#125451-03 Short Term Research Education Program to Increase Diversity in Health-Related Research (The National Institutes of Health had no role in the design and conduct of the study; collection, management, analysis, and interpretation of the data; preparation, review, or approval of the manuscript; and decision to submit the manuscript for publication); LEBARES 2019: Dr. Staffaroni supported by grants from the National Institutes of Health and grants from Larry L. Hillblom Foundation during the conduct of the study</p> <p>Declaration of interest: LEBARES 2018: no disclosures were reported; LEBARES 2019: Dr. Staffaroni reported grants from the National Institutes of Health and grants from Larry L. Hillblom Foundation during the conduct of the study. No other disclosures were reported.</p> <p>Ethical approval needed/obtained for study: all aspects of the intervention and assessment were approved in full by the UCSF IRB</p> <p>Comments by study authors: LEBARES 2018: this article was presented at the American College of Surgeons 104th Annual Clinical Congress, Scientific Forum; October 24, 2018; Boston, Massachusetts; trial registration: ClinicalTrials.gov identifier: NCT03141190</p> <p>Miscellaneous outcomes by the review authors: acronym: Mindful Surgeon; information concerning time points in part received from authors (Lebares, 2019); LEBARES 2018 reports the feasibility results of the pilot, longitudinal, randomized clinical trial to investigate the feasibility of modified MBSR for use by surgical interns; LEBARES 2019 reports an additional analysis of this trial including findings for psychological outcomes, executive functioning, motor skills and neural substrates activated in emotion regulation</p> <p>Stated purpose of the study: LEBARES 2018: to test the feasibility and acceptability</p>

Category	Extracted data
	<p>of modified Mindfulness-Based Stress Reduction (MBSR) training during surgical residency; LEBARES 2019: to explore potential benefits to stress, cognition, and performance in postgraduate year 1 (PGY-1) surgery residents receiving modified mindfulness-based stress reduction (modMBSR)</p> <p>Correspondence: Carter C. Lebares, MD, Department of Surgery, University of California, 513 Parnassus Ave, HSW 1601, San Francisco, CA 94143-0790; carter.lebares@ucsf.edu; San Francisco</p>

Table D6.19

Lin 2019

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power & sample size calculation, level of power achieved): not specified</p> <p>Imputation of missing data: no imputation of missing data; per-protocol analysis (i.e., without 11 participants in IG who missed more than 2 sessions) and available case analysis (i.e., only participants who completed (valid) questionnaires)</p>
Participants	<p>Country: mainland China</p> <p>Setting: nurses from general hospital; training setting not specified</p> <p>Age: mean = 31.50 (SD = 6.90) years</p> <p>Sample size (randomized): 110</p> <p>Sex: 84 women, 6 men</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: not specified</p> <p>Population description: nurses from 2 tertiary-level general hospitals</p> <p>Included criteria: 1) being employed as a full-time nurse</p> <p>Excluded criteria: 1) being a student nurse; 2) suffering from serious somatic disease; 3) taking mood-regulating drugs; 4) having suffered a major traumatic event in the past 6 months; 5) having participated in mindfulness training previously</p> <p>Attrition (withdrawals and exclusions): 20 (IG = 11 missed weekly sessions more than twice, CG = 9 did not complete questionnaire or submitted invalid questionnaires)</p> <p>Reasons for missing data: not specified</p>
Interventions	<p>Intervention: modified mindfulness-based stress reduction program (MBSR) (<i>n</i> = 55)</p> <ul style="list-style-type: none"> • <i>delivery</i>: face-to-face group setting (including guided practice, education, dialogues around participants' observations of their feelings, thoughts, and body sensations during practice) + online part: network Chatgroup (WeChat) on mobile phones • <i>providers</i>: weekly group sessions facilitated by MBSR instructor (conducted by a researcher who has been practicing mindfulness for 2 years and attended several MBSR courses, retreats, and other training activities related to mindfulness and meditation) • <i>duration of treatment period and timing</i>: length of weekly group sessions and daily home-based practice modified to address time constraints of nurses (no half-day retreat compared to traditional MBSR program); 8 weekly 2-hour sessions; 20 minutes of formal mindfulness practice at home for 6 days/week for 8 weeks • <i>description</i>: <ul style="list-style-type: none"> ○ WEEKLY GROUP SESSIONS: <ul style="list-style-type: none"> ▪ WEEK 1: a) theme: first experience of mindfulness; b) session content: 1. introduce to each other; 2. introduce mindfulness and mindfulness training; 3. introduce this program; 4. practice and discussion; 5. assignment of homework; c) in-class exercises: mindful eating (raisin exercises); mindful breathing (awareness of breath); d) homework: 1. formal training: mindful breathing (10 minutes) at least twice a day, 6 days a week; 2. informal training: mindful eating at least once a week

Category	Extracted data
	<ul style="list-style-type: none"> ▪ WEEK 2: a) theme: concentration: the beginning of mindfulness; b) session content: 1. discuss the stress response and the mechanism of MBSR; 2. introduce recent research on mindfulness; 3. practice and discussion; 4. assignment of homework; c) in-class exercises: mindful breathing; mindful walking; d) homework: 1. formal training: mindful breathing (10 minutes) at least twice a day, 6 days a week; 2. informal training: mindful walking at least once a week ▪ WEEK 3: a) theme: pay attention to your body; b) session content: Introduce and teach the body scan technique; c) in-class exercises: mindful breathing; mindful walking; body scan; d) homework: 1. formal training: body scan (20 minutes) at least once a day, 6 days a week; 2. informal training: self-selection ▪ WEEK 4: a) theme: awareness in sports; b) session content: 1. introduce the origin and characteristics of mindfulness yoga; 2. practice and discussion; 3. assignment of homework; c) in-class exercises: body scan; mindfulness standing yoga; d) homework: 1. formal training: body scan (20 minutes) at least once a day, 3 days a week; standing yoga (20 minutes) at least once a day, 3 days a week; 2. informal training: self-selection ▪ WEEK 5: a) theme: thought is not reality; b) session content: 1. discuss the importance and truth of thought; 2. practice and discussion; 3. assignment of homework; c) In-class exercises: mindfulness meditation (mindful sitting with choiceless awareness); standing yoga; d) homework: 1. formal training: mindfulness meditation (20 minutes) at least once a day, 3 days a week; standing yoga (20 minutes) at least once a day, 3 days a week; 2. Informal training: self-selection ▪ WEEK 6: a) theme: emotional management by mindfulness; b) session content: 1. listen to your emotions; 2. understand the relationship between the body and emotions; 3. introduce RAINa ; 4. practice and discussion; 5. assignment of homework; c) in-class exercises: mindfulness meditation (mindful sitting with choiceless awareness); reclining yoga; d) homework: 1. formal training: mindfulness meditation (20 minutes) at least once a day, 3 days a week; reclining yoga (20 minutes) at least once a day, 3 days a week; 2. informal training: self-selection ▪ WEEK 7: a) theme: love yourself, love others; b) session content: 1. discuss interpersonal communication skills; 2. games (seeing the good in people); 3. practice and discussion; 4. assignment of homework; c) in-class exercises: transposition exercise; mindful communication; love-kindness mediation; d)homework: 1. formal training: participant's choice of practice (20 minutes) and love-kindness mediation at least once a day, 6 days a week; 2. informal training: self-selection ▪ WEEK 8: a) theme: new mindful life; b) session content: 1. retrospective practice; 2. introduce and teach 3-

Category	Extracted data
	<p>minute breathing space; 3. encouragement to continue practicing mindfulness in daily life; c) In-class exercises: mindfulness meditation; mindfulness yoga; body scan; 3-minute breathing space; d) homework: participant's choice of practice</p> <ul style="list-style-type: none"> ▪ NETWORK CHATGROUP WeChat: sending of session PowerPoint slides and audio recordings of guided mindfulness exercises, which helped the participants to share their practice experience or to ask the MBSR instructor questions; through WeChat group, nurses urged to attend sessions on time, to complete home-based practice and to fill out questionnaire, but home-based practice not mandatory <ul style="list-style-type: none"> • <i>compliance</i>: during 8 weeks, research assistants recorded attendance of members of IG; if participants absent more than 2 times, participant classified as dropout from intervention; $n = 11/55$ (20%) missed weekly sessions more than twice/did not complete the weekly sessions and most of them did not finish the homework as required owing to lack of time (according to reports of learning experiences); this noncompliance reduces effectiveness of intervention to a certain extent • <i>integrity of delivery</i>: not specified • <i>economic information</i>: upon completion of the program, the participants were incentivized with continuing education credits if they attended at least 50% of the group sessions • <i>theoretical basis</i>: based on the principles and exercises of MBSR (Kabat-Zinn, 1990) and Mindfulness-based Cognitive Therapy (MBCT; Teasdale et al., 2000) <p>Control: wait-list control ($n = 55$)</p> <ul style="list-style-type: none"> • <i>description</i>: CG had also WeChat group for connection and sending of questionnaires • <i>compliance</i>: no withdrawals/exclusions during waiting period specified
Outcomes	<p>Outcomes collected and reported:</p> <ul style="list-style-type: none"> • perceived stress - Perceived Stress Scale • positive affect - Positive and Negative Affect Schedule (PANAS) • negative affect - PANAS • resilience - Connor-Davidson Resilience Scale • job satisfaction - McCloskey/Mueller Satisfaction Scale <p>Time points measured and reported: 1) pre-intervention; 2) postintervention; 3) 3-month follow-up (3 months postintervention)</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: no correspondence required</p> <p>Study start/end date: exact study dates not specified; group intervention for 8 weeks from April 25, 2017 to June 16, 2017</p> <p>Funding source: receipt of the following financial support for the research, authorship, and/or publication of this article: study supported by a grant from the General Program of Science and Technology Plan for Health Care in Dongguan City of Guangdong Province (2016105101286)</p> <p>Declaration of interest: no potential conflicts of interest with respect to the research, authorship, and/or publication of this article</p> <p>Ethical approval needed/obtained for study: approval by Ethical Committee of Xiangya Nursing School (approval number 2015078)</p> <p>Comments by study authors: funder played no role in the study design, data collection, data analysis, manuscript preparation, or decision to publish the report</p> <p>Miscellaneous outcomes by the review authors: not relevant</p>

Category	Extracted data
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Table D6.20

Loiselle 2018

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power & sample size calculation, level of power achieved): There is an effect size of 0.6225 when using change scores for treatment and control groups, and their respective standard deviations, from a recent study using the Transcendental Meditation (TM) technique as an intervention and measuring burnout with the Maslach Burnout Inventory (MBI) (Elder et al., 2014). Applying Cohen's power tables for $P < 0.05$ to this effect size, means the number of participants per group that is needed is 12; recruiting 20 participants per group allows for 20% attrition</p> <p>Imputation of missing data: no imputation of missing data; available case analysis (i.e., only participants who completed postintervention assessments)</p>
Participants	<p>Country: USA</p> <p>Setting: conducted at a medical school hospital and affiliated Veterans Affairs (VA) hospital</p> <p>Age: mean = 45.1 (SD = 10.51) years</p> <p>Sample size (randomized): 40</p> <p>Sex: 23 women, 17 men</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: not specified; burnout and depression values at pre-intervention not reported</p> <p>Population description: academic physicians working at a medical school and hospital in a large Midwestern metropolitan area</p> <p>Included criteria: 1) being an academic attending physician at the Loyola Chicago School of Medicine or VA hospital; 2) commitment to attend all required sessions for learning the TM program (intervention) and monthly follow-ups; 3) agreeing to practice it twice daily for 20 minutes and to complete both pre-and posttesting (at 1 month and 4 months), including both the entry and exit interviews; additional criterion in trial registration = having a medical doctor degree</p> <p>Excluded criteria: see trial registration; 1) current suicidal ideation (adverse event of suicidal ideation reporting excluded from study until such time event was resolved); 2) previous instruction in the TM technique</p> <p>Attrition (withdrawals and exclusions): 7 lost to follow-up (i.e., did not complete posttest/posttest non-compliance; IG = 6, CG = 1)</p> <p>Reasons for missing data: not specified</p>
Interventions	<p>Intervention: TM technique ($n = 21$)</p> <ul style="list-style-type: none"> • <i>delivery</i>: INSTRUCTION: face-to-face group setting (classes) + face-to-face individual instruction; DAILY PRACTICE OF TM TECHNIQUE: individual • <i>providers</i>: instruction in TM technique conducted by experienced certified instructors from the area; after instruction: self-guided practice • <i>duration of treatment period and timing</i>: total treatment duration: 4 months; INSTRUCTION: 5 initial class instructions in TM technique (approximately 5 hours 40 minutes) followed by 6 additional classes (Follow-up sessions) of 20-60 minutes each over 4-month period; DAILY PRACTICE: 2x daily for 20 minutes • <i>description</i>: <ul style="list-style-type: none"> ○ TM technique = simple mental procedure; allows the mind and body to experience a unique state of restful alertness

Category	Extracted data
	<ul style="list-style-type: none"> ○ categorized in the automatic self-transcending category of meditation practices: automatic in that it does not involve any concentration or control ○ allows the mental activity to settle down in a spontaneous and natural manner during a process called transcending, or going beyond, until it reaches a state beyond conscious thinking ○ correspondingly, the body settles down to a deep state of rest which allows stress to dissolve and the nervous system to rejuvenate ○ a) INSTRUCTION: 1) information session (1 hour); 2) personal interview with a certified instructor (5-10 minutes); 3) personal instruction – individual session with certified instructor (1.5 hours); 4) group instruction – verifying the correctness of the practice and further instruction (1 hour); 5) group instruction – understanding the mechanics of the TM technique from personal experiences (1 hour); 6) group instruction – understanding the growth of higher stages of development through the regular practice of the TM technique (1 hour); 7) follow-up sessions (20-60 mins.) offered each month and participants reminded to attend by email and/or phone call ○ b) DAILY PRACTICE: participants asked to practice 2x/day for 20 minutes • <i>compliance</i>: <ul style="list-style-type: none"> ○ <i>n</i> = 21/21 received allocated intervention; researcher oversaw all test administration and tracking of subject compliance ○ COMPLIANCE: participants asked for twice-daily practice of TM technique: <ul style="list-style-type: none"> ▪ 1) 1-month assessment: number of participants practicing the technique 2x/day on average was 10 (67%); 1x/day: 5 (33%); total compliance based on at least 1 session per day: 15 (100%) ▪ 2) 4-month assessment: 6 (40%) reported practicing 2x/day, 8 (53%) 1x/day and 1(6%) not practicing; total compliance based on at least 1 session per day: 14 (93%) ▪ Time and scheduling conflicts most often reasons cited for less than twice a day practice • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>: categorized in automatic self-transcending category of meditation practices
	Control: wait-list control (<i>n</i> = 19) <ul style="list-style-type: none"> • <i>description</i>: asked to maintain a usual routine and not add any self-development programs during the test period • <i>compliance</i>: <i>n</i> = 19/19 received allocated intervention; researcher oversaw all test administration and tracking of subject compliance
Outcomes	<p>Outcomes collected and reported:</p> <ul style="list-style-type: none"> • burnout - MBI – subscale for health professionals • depression - Beck Depression Inventory-II • perceived stress - Perceived Stress Scale • insomnia - Insomnia Severity Index • resilience - Brief Resilience Scale <p>Time points measured and reported: 1) pre-intervention; 2) during intervention (1-month posttest of 4-month intervention period); 3) postintervention (4-month posttest; i.e., in the end of 4-month intervention period)</p>

Category	Extracted data
Notes	<p>Adverse events: if adverse event reported through testing/interviews, it was reported to principal investigator who would speak to this potential study participant and recommend that they be seen in Employee Health; in case of suicidal ideation as adverse event, participant would be excluded from study until event was resolved; no adverse events reported during the study period</p> <p>Contact with authors: We contacted the authors to ask for the unadjusted means and SDs for all outcomes at 1- and 4-month assessment for both groups, but received no response to two inquiries.</p> <p>Study start/end date: see trial registration: August 2015 to September 2016</p> <p>Funding source: not specified</p> <p>Declaration of interest: not specified</p> <p>Ethical approval needed/obtained for study: approved by IRB at Maharishi University of Management in March 2015; followed by IRB for the chosen medical school approval in July 2015</p> <p>Comments by study authors: trial registration: NCT03714204</p> <p>Miscellaneous outcomes by the review authors: dissertation</p> <p>Correspondence: Marie Ellen Loiselle; principal investigator of study (NCT03714204): Carla L Brown, PhD, Strich School of Medicine; Gregory Gruener, MD (study director), Loyola University Medical Center, 2160 S. First Ave; Maywood, IL 60153</p>

Table D6.21

Luthar 2017

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power sample size calculation, level of power achieved): Based on a power analysis, the study authors set out to include 40 women in the study; with this number and assuming $\alpha = 0.05$, power was 0.80 to detect an effect size of partial η^2 of 0.17, and 0.65 to detect η^2 of 0.12.</p> <p>Imputation of missing data: 1 participant missing for parenting stress at time 2 and time 3 but all participants analyzed in ANOVAs/ANCOVAs; no imputation specified; available case analysis for cortisol analysis (only participants for whom outcomes were obtained)</p>
Participants	<p>Country: USA</p> <p>Setting: Mayo Clinic</p> <p>Age: mean = 39.06 (SD = 5.49) years</p> <p>Sample size (randomized): 40</p> <p>Sex: 40 women</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: depression (Beck Depression Inventory, BDI): IG = 8.76 (6.34), CG = 8.58 (4.10); burnout, emotional exhaustion (Maslach Burnout Inventory, MBI): IG = 32.7 (13.72), CG = 33.37 (10.21); burnout, depersonalization: IG = 10.0 (7.78), CG = 9.58 (7.43); burnout, personal accomplishment: IG = 39.8 (5.14), CG = 37.32 (5.62); global symptoms: IG = 0.52 (0.47), CG = 0.43 (0.26)</p> <p>Population description: physician mothers at Mayo Clinic (physicians, PhD's (doctor of philosophy) in clinical practice, NPs (nurse practitioners), and PAs (physician's assistants))</p> <p>Inclusion criteria: having at least 1 child aged 18 years or younger</p> <p>Exclusion criteria: not specified</p> <p>Attrition (withdrawals and exclusions): PSYCHOLOGICAL MEASURES (parenting stress; information received from authors; Stonnington, 2017): postintervention: CG = 1/19 (5.3%); 3-month follow-up: CG = 1 (5.3%); BIOLOGICAL MEASURES (unclear if IG or CG): pre-intervention: 1; postintervention: 1; 3-month follow-up: 7</p> <p>Reasons for missing data: unclear (reasons for missing data in CG on parenting stress); cortisol: pregnancies and maternity leaves ($n = 3$), time schedules ($n = 2$), exclusions due to statistical outliers ($n = 2$; > 2 SD from the mean)</p>
Interventions	<p>Intervention: Authentic Connections Group (ACG) ($n = 21$)</p> <ul style="list-style-type: none"> • <i>delivery</i>: face-to-face; group sessions (5-7 participants); clear topics and exercises but non-didactic sessions; guided discussions and role plays • <i>providers</i>: sessions led by female psychiatrist; led by a skilled female group facilitator trained in the manualized procedures; received training beforehand; weekly supervision meetings with the principal investigator were conducted to ensure fidelity to manual procedures • <i>duration of treatment period and timing</i>: 12 weekly 1-hour sessions (brief version) • <i>description</i>: <ul style="list-style-type: none"> ○ Structured, relational supportive intervention; central goal is to facilitate authentic, supportive relationships among mothers. ACG meetings were based in respect, empathy, and empowerment. ○ SESSION 1 - INTRODUCTION: who tends you, the caregiver?; authentic connections are vital for mothers' well-being; through these, there are benefits to work and parenting

Category	Extracted data
	<ul style="list-style-type: none"> ○ SESSION 2 - MINIMIZING RUMINATION: when we feel stressed, we can ruminate and “pile” one concern after another; helpful strategies include thought stopping, relaxation exercises, reaching out for support ○ SESSION 3 - CHILDREN'S PAIN AND TO-GO COMMITTEES: it’s very hard to watch our children in pain; we all need “go-to committees ○ SESSION 4 - OBSTACLES TO CONNECT AUTHENTICALLY: we each have our own reasons to avoid reaching out for help; explore these, and understand how they constrain closeness with others ○ SESSION 5 - ANGER/HURT: behind anger is usually pain; it is important to express hurts clearly and directly, not indirectly through such behaviors as nagging or being critical ○ SESSION 6 - SUPPORT WALLETS: positive features of each woman are captured in messages written by each for all others; kept in “support wallets” ○ SESSION 7 - ASSERTIVENESS MENTORSHIP AT WORK: women often have trouble asserting themselves when treated poorly; speak up; proactively support each other in the workplace ○ SESSION 8 - "GOOD ENOUGH" MOTHERING: kids model what they see in our behaviors; share insights from sessions with them; in tough moments, we often “know” what we should do but can’t because of depletion; get support ○ SESSION 9 - CONTINUITY AFTER TERMINATION: continuity of authentic connections is essential for us ○ SESSION 10 - SHAME VS SELF-COMPASSION: keep shaming, global negative self-attribution” at bay; practice gentleness toward selves ○ SESSION 11 - LIMIT-SETTING AFFECTION: it’s important to set developmentally appropriate limits; be consistent in enforcing; all children must have affection – conveyed directly ○ SESSION 12 - PRIORITIZE TENDING: do stay connected! • <i>compliance</i>: no dropouts across 12-week intervention; mean attendance: 10.4 of 12 sessions (87%) • <i>integrity of delivery</i>: group participants also rated the clinician after the intervention to gauge fidelity • <i>economic information</i>: not specified • <i>theoretical basis</i>: based on the structured Relational Psychotherapy Mothers’ Groups (RPMG) program previously shown to be effective in two 5-year trials (Luthar & Suchman, 2000; Luthar et al., 2007). Originally developed for low-income women at risk for parenting difficulties, RPMG encompasses 24 sessions for women facing multiple stressors (including single motherhood and mental illness). Resilience research has established that the most important protective factor in helping at-risk mothers is the receipt of regular support (Luthar, 2015; Luthar & Eisenberg, 2017), especially from others facing similar circumstances. <p>Control: no intervention (12 weekly hours of protected time to be used as desired) (n = 19)</p>
Outcomes	<p>Outcomes collected and reported:</p> <p><i>Primary outcome</i></p> <ul style="list-style-type: none"> • global symptoms - Brief Symptom Index • depression - BDI • self-compassion - Self-Compassion Scale • feeling loved - 4 items • physical affection - 3 items • parenting stress - Parenting Stress Inventory

Category	Extracted data
	<ul style="list-style-type: none"> • burnout, emotional exhaustion - MBI <p><i>Secondary outcome</i></p> <ul style="list-style-type: none"> • burnout, personal accomplishment - MBI • burnout, depersonalization - MBI • plasma cortisol - blood sample <p>Time points measured and reported: 1) pre-intervention; 2) postintervention; 3) 3-month follow-up (3 months postintervention)</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: We contacted the authors to ask for the means and SDs for outcome measures in the two groups at each time point (Stonnington, 2017).</p> <p>Study start/end date: February 2015 to November 2015 (actual completion date according to trial registration: December 2016)</p> <p>Funding source: supported by a Seed fund from Arizona State University to Luthar; Mayo Clinic funded and supported medical-care professionals' time to participate in study activities</p> <p>Declaration of interest: no conflict of interest with respect to publication of this article.</p> <p>Ethical approval needed/obtained for study: approved by the Mayo Clinic IRB</p> <p>Comments by authors: trial registration: ClinicalTrials.gov NCT02540473 URL: https://clinicaltrials.gov/show/NCT02540473</p> <p>Miscellaneous outcomes by the review authors: not relevant</p> <p>Correspondence: Suniya S. Luthar, PhD, Arizona State University, 950 S. McAllister Drive, Tempe, AZ 85281; Suniya.Luthar@asu.edu; Phone: 914-310-1102; Trial registration: Cynthia Stonnington, MD, Associate Professor of Psychiatry, Mayo Clinic, Stonnington.Cynthia@mayo.edu</p>

Table D6.22

Mache, Danzer 2015

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power sample size calculation, level of power achieved): not specified</p> <p>Imputation of missing data: no imputation of missing data</p>
Participants	<p>Country: Germany</p> <p>Setting: clinic departments specializing in surgical medicine</p> <p>Age: mean = 27 (SD = 2.5) years</p> <p>Sample size (randomized): 69 (according to authors: 69 randomized, but after randomization, 1 was excluded in IG and 68 were analyzed)</p> <p>Sex: 39 women, 29 men</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: perceived stress (Perceived Stress Questionnaire, PSQ): IG = 59.3 (18.5), CG = 56.7 (18.7); both groups above cut-off for moderate stress level; IG near cut-off for high stress</p> <p>Population description: surgeons in their first year of work from 4 clinic departments specializing in surgical medicine</p> <p>Inclusion criteria: 1) employment as a surgeon in a hospital department; 2) working full time; 3) working experience of less than a year; 4) being able and willing to participate; 5) agreement to complete a survey at least 2 times</p> <p>Exclusion criteria: not specified</p> <p>Attrition (withdrawals and exclusions): 1 exclusion in IG</p> <p>Reasons for missing data: health reasons (sickness absence)</p>
Interventions	<p>Intervention: multicomponent mental competency and stress management training ($n = 36$)</p> <ul style="list-style-type: none"> • <i>delivery</i>: face-to-face; group sessions (3 groups; group size maximum of 10 participants); theoretical input, watching videos, oral discussions, experiential exercises, and home assignments • <i>providers</i>: Two qualified psychologists performed the training. Both were familiar with cognitive behavioral as well as solution-focused work in group settings. • <i>duration of treatment period and timing</i>: 12 weekly 2-hour sessions • <i>description</i>: <ul style="list-style-type: none"> ○ psychosocial skill training combined with cognitive-behavioral and solution-focused counseling ○ main focus was on coping strategies, support between the junior surgeons and solutions and goals for the future; main topics of the sessions focused on surgeons' actual work situation, but any kind of (work) topic was suitable; in each session, a topic was introduced and discussed ○ SESSIONS: (1) introduction: "day-to-day working life of a surgeon"; (2) first year as a surgeon; (3) and (4) psychosocial skills for surgeons, parts I and II (resilience, self-esteem, and self-awareness); (5) conflict handling; (6) goal setting and cognitive-behavioral training; (7) relaxation techniques (progressive muscle relaxation and autogenic training); (8) organizational culture/dealing with mistakes; (9) communication; (10) dealing with difficult decisions and social support; (11) self-care and coping with work-related stress; (12) session evaluation; sessions also included: how to speak up to supervisors and senior physicians, questioning their professional actions, seeking

Category	Extracted data
	<p>guidance about one's own clinical performance, and reporting one's mistakes</p> <ul style="list-style-type: none"> • <i>compliance</i>: not specified • <i>integrity of delivery</i>: not specified • <i>economic information (intervention cost, changes in other costs as result of intervention)</i>: not specified • <i>theoretical basis</i>: designed on principles of cognitive-behavioral training and solution-focused group work (Bamberger, 1999; Kim, 2008; Lagerveld et al., 2012; Tan et al., 2014) <p>Control: no intervention ($n = 33$) (control group did nothing related to the intervention topic: any other psychosocial skill training, counseling or therapy (according to contact with authors: possibility of a later participation was announced))</p> <p>Outcomes collected and reported:</p> <p><i>Primary outcome</i></p> <ul style="list-style-type: none"> • resilience - Brief Resilient Coping Scale • perceived stress - PSQ • self-efficacy - Self-Efficacy, Optimism, and Pessimism (SWOP-K9) • optimism - SWOP-K9 • job satisfaction - Copenhagen Psychosocial Questionnaire <p>Time points measured and reported: 1) pre-intervention; 2) postintervention (after 3-month intervention); 3) 3-month follow-up (3 months postintervention/6 months after baseline)</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: We contacted authors to get the information about the number of participants randomized and potential per-protocol analysis. In addition, we asked about the form of control group (no intervention or wait-list control) (Mache, 2017b).</p> <p>Study start/end date: inclusion of participants between March and August 2014; exact study dates not specified</p> <p>Funding source: not specified</p> <p>Declaration of interest: not specified</p> <p>Ethical approval needed/obtained for study: ethical approval by the Free University Berlin</p> <p>Comments by authors: not specified</p> <p>Miscellaneous outcomes by the review authors: no intervention control group according to information from authors</p> <p>Correspondence: Stefanie Mache, PhD, Institute for Occupational and Maritime Medicine (ZfAM), University Medical Center Hamburg-Eppendorf, Seewartenstrasse 10, 20459 Hamburg, Germany; s.mache@uke.de; stefanie.mache@bgv.hamburg.de</p>

Table D6.23

Mache, Vitzthum 2015

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power sample size calculation, level of power achieved): A sample size of a minimum of 40 physicians was selected for this pilot study after weighing statistical considerations along with logistical and resource constraints. A sample size of 40 provides a statistical power (2-tailed, $\alpha = 0.05$) of > 85%.</p> <p>Imputation of missing data: no imputation of missing data; per-protocol analysis (only participants who took part in allocated intervention) and available case analysis (only participants for whom outcomes were obtained at 3 time points)</p>
Participants	<p>Country: Germany</p> <p>Setting: several clinic departments specializing in different medical specialties (e.g., internal medicine, pediatrics, neurology, and gynecology)</p> <p>Age: mean = 28 years</p> <p>Sample size (randomized): 90 (according to information from authors; Mache, 2017a)</p> <p>Sex: 51 women, 34 men</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: perceived stress (Perceived Stress Questionnaire, PSQ): IG = 58.1 (19.3), CG = 56.7 (19.8); both groups above cut-off for moderate stress level</p> <p>Population description: hospital physicians from several clinic departments specializing in different medical specialties (e.g., internal medicine, pediatrics, neurology, and gynecology); junior physicians in their first year after graduation</p> <p>Inclusion criteria: 1) employment as a hospital doctor; 2) working at least full time; 3) working experience of less than a year; 4) being able and willing to participate; 5) agreement to complete a survey at least 2 times</p> <p>Exclusion criteria: not specified</p> <p>Attrition (withdrawals and exclusions): 5 (IG = 3/45 (6.7%) exclusions, CG = 2/45 (4.4%) did not complete follow-up questionnaires)</p> <p>Reasons for missing data: health reasons such as operation, accident (IG = 3), did not respond to follow-up questionnaires, reasons not specified (CG = 2)</p>
Interventions	<p>Intervention: psychosocial resilience training ($n = 45$; according to information from authors; Mache, 2017a)</p> <ul style="list-style-type: none"> • <i>delivery</i>: face-to-face; group sessions (maximum 12 participants (four groups)); sessions involve: psycho-education (theoretical input), watching videos, discussions, experiential exercises, and home assignments • <i>providers</i>: Two psychologists delivered the intervention. Both of them were familiar with cognitive behavioral and solution-focused work in group settings. • <i>duration of treatment period and timing</i>: 12 weekly 2-hour sessions • <i>description</i>: <ul style="list-style-type: none"> ○ resilience training in this study focused on a number of objectives: for example, instructing and promoting fundamental communication, goal-setting, improving emotional problems, increasing motivation, self-efficacy, etc ○ focus of the group work was the work situation, but any kind of topic was acceptable; main focus was on coping strategies, support between the participants, and solutions and goals for the future

Category	Extracted data
	<ul style="list-style-type: none"> ○ objectives: instructing and promoting fundamental communication, goal-setting, improving emotional problems, increasing motivation, self-efficacy, etc. ○ 12 sessions: (1) Introduction: “Day-to-day working life of a hospital physician,” (2) self-esteem and self-awareness, (3) resilience, (4) positive thoughts and emotions, (5) cognitive behavioral training, (6) goal setting, (7) social support, (8) communication, (9) conflict handling, (10) dealing with difficult decisions, (11) coping with work-related stress and relaxation, and at the end (12) session evaluation; Sessions also included how to speak up to supervisors and senior physicians, questioning their professional actions, seeking guidance about one’s own clinical performance, and reporting one’s mistakes • <i>compliance</i>: not specified • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>: based on principles of cognitive behavioral training and solution-focused group work (Bamberger, 1999) <p>Control: no intervention ($n = 45$; according to information from authors; Mache, 2017a)</p> <p>(received no training but answered the questionnaire at baseline and follow-up)</p>
Outcomes	<p>Outcomes collected and reported:</p> <p><i>Primary outcome</i></p> <ul style="list-style-type: none"> • resilience - Brief Resilient Coping Scale • perceived stress - PSQ • self-efficacy - Self-efficacy, Optimism and Pessimism (SWOP-K9) • optimism - SWOP-K9 • job satisfaction - German version Copenhagen Psychosocial Questionnaire <p>Time points measured: 1) pre-intervention; 2) postintervention (after 3-month intervention); 3) 3-month follow-up (3 months postintervention/6 months after baseline)</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: We contacted authors to get the information about the number of participants randomized and potential per-protocol analysis (Mache, 2017a).</p> <p>Study start/end date: 96 junior physicians included between February and August 2014; exact study dates not specified</p> <p>Funding source: not specified</p> <p>Declaration of interest: not specified</p> <p>Ethical approval needed/obtained for study: not specified if approved; all procedures in accordance with the ethical standards of the responsible committee on human experimentation and with the Helsinki Declaration of 1975</p> <p>Comments by authors: not specified</p> <p>Miscellaneous outcomes by the review authors: not relevant</p> <p>Correspondence: Dr. Stefanie Mache, Institute for Occupational and Maritime Medicine (ZfAM), University Medical Center Hamburg-Eppendorf, Seewartenstrasse 10, 20459 Hamburg, Germany; s.mache@uke.de</p>

Table D6.24

Mache 2016

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power sample size calculation, level of power achieved): not specified; small sample size</p> <p>Imputation of missing data: no imputation of missing data; information received from authors (Mache, 2018): per-protocol analysis (only participants who took part in allocated intervention and were not excluded)</p>
Participants	<p>Country: Germany</p> <p>Setting: psychiatric clinics/hospital departments specializing in psychiatric medicine</p> <p>Age: mean = 33 (SD = 2.3) years</p> <p>Sample size (randomized): 76</p> <p>Sex: 51 women, 21 men</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: perceived stress (Perceived Stress Questionnaire, PSQ): IG = 61.2 (18.9), CG = 59.8 (17.7); IG with high level of stress, CG with moderate level of stress</p> <p>Population description: physicians working in psychiatric units from 12 hospital departments in the North of Germany specializing in psychiatric medicine</p> <p>Inclusion criteria: 1) employment as a psychiatrist in a psychiatric department; 2) working full time; 3) being able and willing to take part in the study; 4) agreement to complete a survey at least 3 times</p> <p>Exclusion criteria: not specified</p> <p>Attrition (withdrawals and exclusions): 4 exclusions (information received from authors; Mache, 2018): IG = 1/38 (2.6%), CG = 3/38 (7.9%)</p> <p>Reasons for missing data: health reasons (sickness absence)</p>
Interventions	<p>Intervention: self-care skills training/psychosocial skills training combined with cognitive behavioral and solution-focused counselling (<i>n</i> = 38 according to information received from authors; after exclusions: <i>n</i> = 37)</p> <ul style="list-style-type: none"> • <i>delivery</i>: face-to-face; group sessions (maximum 10 psychiatrists); psychoeducation (theoretical input, watching videos, oral group discussions, self-awareness with experimental exercises, homework assignments) • <i>providers</i>: two psychotherapists; registered and accredited as psychotherapists and clinical supervisors; qualifications in cognitive behavioral therapy, systemic therapy and solution-focused brief therapy in individual and group settings • <i>duration of treatment period and timing</i>: 12 weekly 1.5-hour sessions • <i>description</i>: <ul style="list-style-type: none"> ○ focus on actual work situations and problems, coping strategies and support between colleagues and future goals ○ same structure in each session: 1) welcome scenario, 2) reflecting and discussion of the last session; 3) theoretical input; 4) preparing experiential exercise; 5) group discussion; 6) homework assignments; 7) learning process and solutions; 8) summary, feedback and checkout ○ main topics during sessions planned into modules entitled 'self', 'patient' and 'work environment'; in each session, a topic was introduced and discussed: 1) introduction: theoretical input and discussion on the theme – working in psychiatry, personal and professional balance; 2) self-care and coping with work-related

Category	Extracted data
	<p>stressors; 3) relationship to patients, conflict handling in the work setting; 4) communication in the hospital; 5) how to speak up to supervisors and senior physicians; 6) team work and social support; 7) seeking guidance about one's own clinical performance; 8) organizational culture in the hospital setting, reporting one's mistakes and dealing with mistakes; 9) dealing with difficult decisions; 10) emotion regulation (cognitive and relaxation techniques), 11) training evaluation</p> <ul style="list-style-type: none"> • <i>compliance</i>: not specified • <i>integrity of delivery</i>: performance checklist created and signed by the trainers to ensure that intervention protocol was followed; not reported • <i>economic information</i>: not specified • <i>theoretical basis</i>: content designed on principles of self-care techniques (i.e., mindfulness and acceptance based), cognitive behavioral training and solution-focused group work (Wise et al., 2012) <p>Control: no intervention ($n = 38$ according to information received from authors; after exclusions: $n = 35$)</p>
Outcomes	<p>Outcomes collected and reported:</p> <ul style="list-style-type: none"> • perceived stress - PSQ • resilience - Brief Resilient Coping Scale • self-efficacy - Questionnaire of Self-Efficacy, Optimism and Pessimism • job satisfaction - Copenhagen Psychosocial Questionnaire • relationships to patients, support - Quality of Relationship Inventory (QRI) • relationships to patients, conflict - QRI • relationships to patients, depth - QRI <p>Time points measured: 1) pre-intervention; 2) postintervention (after 3-month intervention); 3) 3-month follow-up (3 months postintervention)</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: We contacted authors to get the information about the number of participants randomized and potential per-protocol analysis (Mache, 2018).</p> <p>Study start/end date: not specified</p> <p>Funding source: not specified</p> <p>Declaration of interest: no conflicts of interest reported</p> <p>Ethical approval needed/obtained for study: not specified</p> <p>Comments by authors: not specified</p> <p>Miscellaneous outcomes by the review authors: not relevant</p> <p>Correspondence: Stefanie Mache, Institute for Occupational and Maritime Medicine (ZfAM), University Medical Center Hamburg-Eppendorf, Seewartenstraße 10, 20459 Hamburg, Germany; s.mache@uke.de</p>

Table D6.25

Mache 2017

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power & sample size calculation, level of power achieved): statistical power analysis performed and showed that a sample size of 80 would provide statistical power (2-tailed, $\alpha = 0.05$) of > 85%; therefore, size of the included study groups was considered sufficient for this pilot study, after weighing statistical considerations along with logistical and resource constraints</p> <p>Imputation of missing data: no imputation of missing data; per-protocol analysis (i.e., without 2 participants in IG who participated in less than 80% of training sessions) and available case analysis (i.e., only participants for whom outcomes were obtained at follow-up assessments)</p>
Participants	<p>Country: Germany</p> <p>Setting: junior physicians in gynecology and obstetrics; exact training setting not specified (training sessions performed off duty)</p> <p>Age: mean = 27.5 (SD = 2.2) years</p> <p>Sample size (randomized): 80</p> <p>Sex: 54 women, 26 men</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: emotional exhaustion (subscale of Maslach Burnout Inventory, MBI): IG = 4.10 (0.63), CG = 4.19 (0.71)</p> <p>Population description: junior physicians in gynecology and obstetrics</p> <p>Included criteria: 1) employment in gynecology/obstetrics; 2) being employed full time; 3) a maximum of 2 years of working experience in gynecology or obstetrics; 4) participation in the study during the next 9 months; 5) access to the internet and e-mail</p> <p>Excluded criteria: not specified</p> <p>Attrition (withdrawals and exclusions): exclusions (from follow-up analyses): $n = 2$ in IG; withdrawals (losses to follow-up at follow-up 1 to 3): follow-up 1: $n = 6$ (IG: 1, CG: 5); follow-up 2: $n = 5$ further losses to follow-up (IG: 4, CG: 1); follow-up 3: $n = 7$ further losses to follow-up (IG: 2, CG: 5)</p> <p>Reasons for missing data: for 2 exclusions: participation in less than 80% of training sessions; reasons for losses to follow-up at assessments in two groups not specified</p>
Interventions	<p>Intervention: coping skills training/psychosocial skills training ($n = 40$)</p> <ul style="list-style-type: none"> • <i>delivery</i>: face-to-face group setting; modules of training sessions: psycho-education, theoretical input, watching videos, oral group discussions, experiential exercises, role plays • <i>providers</i>: certified occupational health psychologists with expertise in several stress management techniques, cognitive behavioral therapy as well as solution-focused training • <i>duration of treatment period and timing</i>: 12 weekly 1.5-hour sessions over 3 months; sessions performed off duty • <i>description</i>: <ul style="list-style-type: none"> ○ performed to promote job performance and well-being in physicians and to reduce perceived distress ○ METHODOLOGICAL ELEMENTS: discussion groups organized around a curriculum including elements of reflection, shared experience, and small-group learning among the physicians; training modules enclosed well-established problem-solving and emotion regulation strategies according to Lazarus' transactional

Category	Extracted data
	<p>model of stress; training modules mainly focused on situations and problems experienced at work; practical implication including coping strategies (cognitive, emotional, external, support systems, etc.) were integrated</p> <ul style="list-style-type: none"> ○ SESSIONS: each session with a special work-related topic: <ul style="list-style-type: none"> ▪ (1) introduction: opening and discussion on the theme “working as a gynecologist in the clinical setting” ▪ (2) and (3) experienced work-related problems ▪ (4) and (5) coping skills training (cognitive strategies, emotion regulation, and stress management techniques, self-awareness and resilience ▪ (6) and (7) conflict management, analyzing conflict types and conflict handling in daily work routines ▪ (8) receiving and giving feedback, asking for supervision and feedback ▪ (9) communication training ▪ (10) learning from mistakes, reporting, dealing with consequences, organizational hospital culture ▪ (11) handling difficult medical decisions, creating a support system, how to speak up to supervisors and senior physicians ▪ (12) overall training evaluation • <i>compliance</i>: $n = 38$ of 40 in IG participated in $\geq 80\%$ of training sessions; overall training satisfaction (range: 1-5) mean = 4.58; satisfaction with training design: mean = 4.34; atmosphere during training: mean = 4.21; gynecologists would recommend skills training program (mean = 4.58); 4 levels of Kirkpatrick’s training criteria demonstrated to be fulfilled • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified; training sessions were performed off duty • <i>theoretical basis</i>: based on Lazarus’ transactional model of stress (Malouff et al., 2007); problem- and emotion-focused coping skills and cognitive behavioral as well as solution-focused counselling <p>Control: no intervention ($n = 40$)</p> <ul style="list-style-type: none"> • <i>description</i>: CG received neither coping skills training nor any other comparable intervention (i.e., any other psychosocial skills training, counselling or therapy)
Outcomes	<p>Outcomes collected and reported:</p> <ul style="list-style-type: none"> • perceived stress - Perceived Stress Questionnaire • emotional exhaustion - emotional exhaustion subscale of MBI • emotion regulation skills, comprehension - Emotion Regulation Skills Questionnaire (ERSQ-27) • emotion regulation skills, acceptance - ERSQ-27 • emotion regulation skills, self-support - ERSQ-27 • resilience - Brief Resilient Coping Scale • job satisfaction - job satisfaction scale of Copenhagen Psychosocial Questionnaire <p>Time points measured and reported: 1) pre-intervention; 2) postintervention (after final session of training; follow-up 1); 3) 3-month follow-up (3 months after final session of training; follow-up 2); 4) 6-month follow-up (6 months after final session of training; follow-up 3)</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: We contacted the authors to ask whether it is correct that they performed available case analysis with participants for whom outcomes were obtained at follow-up assessments (Mache, 2019a).</p>

Category	Extracted data
	<p>Study start/end date: not specified</p> <p>Funding source: not specified</p> <p>Declaration of interest: no conflict of interest declared</p> <p>Ethical approval needed/obtained for study: approved by IRB of the Free University Berlin</p> <p>Comments by study authors: not specified</p> <p>Miscellaneous outcomes by the review authors: information received from authors (Mache, 2019a): correct that available case analysis only with participants for whom outcomes were obtained at follow-up assessments for outcomes reported in Table 2 of the publication (e.g., assessment II: $n = 37$ in IG and $n = 35$ in CG)</p> <p>Correspondence: Stefanie Mache; Institute for Occupational and Maritime Medicine (ZfAM), University Medical Center Hamburg-Eppendorf, Seewartenstrasse 10, 20459 Hamburg, Germany; Institute of Occupational Medicine, Social Medicine and Environmental Medicine, Goethe-University, Theodor-SternKai 7, 60590 Frankfurt Am Main, Germany; s.mache@uke.de</p>

Table D6.26

Mealer 2014

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power sample size calculation, level of power achieved): not done because the intent was to determine feasibility and acceptability; recruitment was not based on a power calculation</p> <p>Imputation of missing data: no imputation of missing data for 2 participants withdrawn before intervention; per-protocol analysis (only participants who took part in allocated intervention); missing data in scales inferred by mean of remaining items</p>
Participants	<p>Country: USA</p> <p>Setting: academic institution, intensive care unit (ICU)</p> <p>Age: see Population description; age not specified</p> <p>Sample size (randomized): 29</p> <p>Sex: 24 women, 5 men</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: 100% of the ICU nurses ($n = 27$) were positive for symptoms of anxiety (Hospital Anxiety and Depression Scale, HADS, score ≥ 8) and 77% were positive for symptoms of depression (HADS score ≥ 8); high rate of burnout syndrome (Maslach Burnout Inventory, MBI): 81% were positive for emotional exhaustion, 77% were positive for depersonalization, and 77% were positive for a decrease in personal accomplishment; median resilience score (Connor-Davidson Resilience Scale, CD-RISC) was 73 (range = 67-77); 44% of the ICU nurses met the diagnostic criteria for post-traumatic stress disorder</p> <p>Population description: ICU nurses from an academic institution; medical, surgical, burn, and cardiac ICUs</p> <p>Inclusion criteria: 1) currently working 20 hours per week at the ICU bedside; 2) had no underlying medical condition that would be a contraindication to exercise; 3) scored 82 or less on the Connor-Davidson Resilience Scale (CD-RISC)</p> <p>Exclusion criteria: 1) were unable to participate in a 2-day educational workshop or 2) had a medical condition that would limit exercise</p> <p>Attrition (withdrawals and exclusions): 2 withdrawn before start of the training period (IG = 1/14 (7.1%), CG = 1/15 (6.7%))</p> <p>Reasons for missing data: not specified</p>
Interventions	<p>Intervention: multimodal resilience training program ($n = 14$)</p> <ul style="list-style-type: none"> <i>delivery</i>: face-to-face (educational workshop, written exposure therapy, Mindfulness-Based Stress Reduction (MBSR) practices, exercise, event-triggered counseling sessions); guided compact disc (CD) for MBSR practices <i>providers</i>: writing sessions led by expressive writing experts trained in motivational interviewing and resilience; MBSR practices: experienced professional formally trained in MBSR; event-triggered counseling: experienced licensed clinical social worker trained in traumatic stress and working with a variety of health care professionals <i>duration of treatment period and timing</i>: 12 weeks (2-day educational workshop; two 2-hour guided mindfulness exercise sessions; variable number of sessions in event-triggered counseling during the 12 weeks, each session approximately 30 to 60 minutes) <i>description</i>: 5 components <ul style="list-style-type: none"> 1) 2-DAY EDUCATIONAL WORKSHOP: introduction to resilience training and the types of psychological distress experienced in

Category	Extracted data
	<p>the ICU; self-care topics and cognitive-behavioral therapy (CBT) introduced; MBSR practices: two 2-hour guided mindfulness exercise sessions during educational workshop, provision of guided CDs for use during the 12-week intervention, 4-hour introduction to written exposure as a guide for the following written exposure sessions</p> <ul style="list-style-type: none"> ○ 2) WRITTEN EXPOSURE THERAPY: participants receive weekly writing prompts based on Pennebaker's expressive writing framework and the written exposure therapy protocol developed by Sloan and colleagues, participants asked to write twelve 30-minute sessions based on the e-mailed prompts that were delivered by our writing experts, writing sessions included topics such as challenges faced at work, feeling incapacitated, feeling conflicted, and ruminating about sensitive topics; writing experts provide feedback to each participant that would encourage resilience building ○ 3) MBSR TECHNIQUES: body scan and sitting meditation, guided CD (step-by-step audio guide of the MBSR techniques) to assist with the techniques when participants returned home. Each participant asked to practice these techniques for 15 minutes at least 3 times per week during the 12-week intervention period. The actual length of time spent entered into electronic diary in the REDCap database ○ 4) EXERCISE: 3-month membership to the institution's wellness center provided at no cost or the participant could choose to use a personal gym; participants asked to engage in 30 to 45 minutes of aerobic exercise at least 3 days per week, time spent exercising entered into the database. Exercising by using the treadmill, elliptical machine, stair climbing, stationary bicycle, or rowing machine suggested ○ 5) EVENT-TRIGGERED COUNSELING SESSIONS: each participant asked to participate in an event-triggered CBT session; events that triggered these therapy sessions included: a patient's death, participating in end-of-life family discussions, performing cardiopulmonary resuscitation, performing futile care with a terminal patient, caring for a patient with massive bleeding, or caring for a patient with traumatic injuries; each session approximately 30 to 60 minutes, used a cognitive behavioral approach to challenge negative thoughts and promote resilience through cognitive flexibility and restructuring <ul style="list-style-type: none"> • <i>compliance</i>: 100% attendance at the 2-day workshop; 100% of the participants completing all of their weekly written exposure sessions (12 writing sessions per participant); 66% of the MBSR sessions completed with a mean of 65 (95% CI, 59-65) minutes per week; 88% of the expected exercise sessions completed with a mean of 210 (95% CI, 177-244) minutes of exercise per week; each participant attended a mean of 2 event-triggered CBT sessions, and only 2 participants did not require an event-triggered session; no participants dropped out of the study • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>: CBT, MBSR, written exposure therapy based on Pennebaker and Beall (1986) and Sloan et al. (2012); CBT bolsters modifiable resilient characteristics such as the ability to engage the support of others, optimism, faith, cognitive flexibility, and self-care. Self-care behaviors that promote coping with the physical and emotional consequences of stress include MBSR, expressive writing and exercise.;

Category	Extracted data
	these coping mechanisms integrated into multimodal resilience intervention
	Control: no intervention (but assessment of exercise) ($n = 15$)
Outcomes	<p>Outcomes collected and reported:</p> <ul style="list-style-type: none"> • resilience - CD-RISC • post-traumatic stress symptoms - Posttraumatic Diagnostic Scale • depression - HADS • anxiety - HADS • burnout, emotional exhaustion - MBI • burnout, depersonalization - MBI • burnout, reduced sense of personal accomplishment - MBI <p>Time points measured and reported: 1) pre-intervention; 2) postintervention (within 1 week postintervention)</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: We contacted the authors to ask for the means and SDs for outcome measures in the two groups at each time point (Mealer, 2017).</p> <p>Study start/end date: recruited from October 2012 to December 2012; exact study dates not specified</p> <p>Funding source: funded by a grant from the National Institutes of Health (grant number K24 HL-089223-07)</p> <p>Declaration of interest: not specified</p> <p>Ethical approval needed/obtained for study: approved by the Colorado Multiple IRB</p> <p>Comments by authors: not specified</p> <p>Miscellaneous outcomes by the review authors: not relevant</p> <p>Correspondence: Meredith Mealer, Division of Pulmonary Sciences and Critical Care Medicine, Department of Medicine, University of Colorado School of Medicine, 12700 E 19th Ave, C-272, Aurora, CO 80045; Meredith.Mealer@ucdenver.edu</p>

Table D6.27

Medisaukaite 2019

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power & sample size calculation, level of power achieved): appropriate sample size was calculated using G*Power software: repeated measures, within-between subject interaction (α error probability = 0.05; power = 0.95; 2 groups; measured at 2 time points; 0.5 correlation between repeated measures; medium effect size F of .25) (Faul et al., 2007); calculated actual power was 0.95 for sample of 54 participants, 27 participants in each group</p> <p>Imputation of missing data: no imputation of missing data; per-protocol analysis (i.e., main comparison: without 23 participants in IG4 who did not complete the intervention; identical to remaining 3 trial groups in overall analysis) and available case analysis (i.e., only participants for whom outcomes were obtained and who completed questionnaires; i.e., excluding participants lost to follow-up)</p>
Participants	<p>Country: UK</p> <p>Setting: doctors; training setting not specified</p> <p>Age: for all 5 groups, mean = 47.88 (SD = 11.21) years</p> <p>Sample size (randomized): 381 (randomized) to 5 groups; 150 participants in the main comparison (IG4 vs CG)</p> <p>Sex: 42 women, 49 men (out of 91 analyzed from IG4 and CG)</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: burnout, emotional exhaustion (Maslach Burnout Inventory, MBI): IG = 3.26 (1.41), CG = 3.2 (1.4); burnout, depersonalization: IG = 1.98 (1.49), CG = 1.68 (1.29); burnout, personal accomplishment: IG = 4.42 (0.83), CG = 4.41 (0.84); anxiety (General Anxiety Disorder-7, GAD-7): IG = 0.96 (0.81), CG = 0.88 (0.74); psychiatric morbidity (General Health Questionnaire, GHQ): IG = 2.14 (0.57), CG = 2.17 (0.61); alcohol dependence (Alcohol Use Disorder Identification Scale, AUDIT): IG = 7.5% (3), CG = 10.6% (5)</p> <p>Population description: doctors who currently practice medicine</p> <p>Included criteria: see trial registration; 1) medical doctors across all specialties and professional grades who have a regular contact with patients and works in the UK</p> <p>Excluded criteria: not specified</p> <p>Attrition (withdrawals and exclusions): 154 overall. IG1 = 33 (15 = did not complete intervention, 16 = lost to follow-up, 2 = came back after more than 23 days (also excluded from analysis)); IG2 = 31 (14 = did not complete intervention, 17 = lost to follow-up); IG3 = 31 (15 = did not complete intervention, 15 = lost to follow-up, 1 = came back after more than 23 days (also excluded from analysis)); IG4 = 36 (23 = did not complete intervention, 11 = lost to follow-up, 2 = came back after 23 questionnaires (also excluded from analysis)); CG = 23 (4 = did not complete questionnaire, 19 = lost to follow-up)</p> <p>Reasons for missing data: not specified</p>
Interventions	<p>In total, 5 trial groups:</p> <ul style="list-style-type: none"> • IG1: module 1 of IG4: $n = 80$ • IG2: module 2 of IG4: $n = 73$ • IG3: module 3 of IG4: $n = 78$ • IG4: all 3 modules: $n = 75$ • CG: $n = 75$ <p>Intervention: induction program (see trial registration; trial group 4) ($n = 75$)</p> <ul style="list-style-type: none"> • <i>delivery</i>: setting not specified • <i>providers</i>: not specified

Category	Extracted data
	<ul style="list-style-type: none"> • <i>duration of treatment period and timing</i>: not exactly specified; eventually 1 week • <i>description</i>: <ul style="list-style-type: none"> ○ combination of content of three modules (trial groups 1-3) ○ MODULE 1, STRESS AT WORK: <ul style="list-style-type: none"> ▪ teaching about psychology of stress and burnout, and impact of work on stress or burnout ▪ covers the General Adaptation Syndrome (Selye, 1965), Maslach burnout theory (Maslach & Jackson, 1981), Job Demands-Resources model (Bakker et al., 2005; Bakker & Demerouti, 2007) ▪ gives doctors information about prevalence rates among doctors and other healthcare professionals; quiz and open-ended reflection exercise asking doctors to consider what they have learnt from the module and how they would use it ○ MODULE 2, DEALING WITH A PATIENT'S DEATH: <ul style="list-style-type: none"> ▪ teaching about dealing with patient's death and the Kübler Ross stages of grief (Kübler-Ross, 1997), a theoretical perspective on how health care professionals experience loss when patients die and information about ways of coping with a patient's death (Papadatou, 2000) ▪ quiz and open-ended reflection exercise ○ MODULE 3, MANAGING STRESS AT WORK: <ul style="list-style-type: none"> ▪ teaching about managing distress; doctors taught about how to develop resilience, cognitive emotional regulation, relationships, work-family balance, time for hobbies and recreation (Carver et al., 1989; Fuß et al., 2008; Garnefski & Kraaij, 2007; Graham et al., 2001; Huggard et al., 2016; Netemeyer et al., 1996; Ramirez et al., 1995) ▪ quiz and open-ended reflection exercise • <i>compliance</i>: trial group 4: $n = 23/75$ did not complete the intervention • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>: not specified (see different literature cited for content in different modules) <p>Control: no intervention ($n = 75$)</p> <ul style="list-style-type: none"> • <i>compliance</i>: not specified; $n = 4$ did not complete questionnaire
Outcomes	<p>Outcomes collected and reported:</p> <ul style="list-style-type: none"> • burnout, emotional exhaustion - MBI • burnout, depersonalization - MBI • burnout, low personal accomplishment - MBI • anxiety - GAD-7 • psychiatric morbidity - GHQ • grief - Texas Revised Inventory of Grief • alcohol dependence - Patient Health Questionnaire • alcohol use/drinking habits - AUDIT • legal/illegal drug use - self-developed drug use items • insomnia - Insomnia Severity Index • binge-eating - Binge Eating Scale from Eating Disorder Diagnostic Scale • physical symptoms - Physical Symptom Inventory • coping mechanisms, active coping - Coping Mechanisms Scale • coping mechanisms, substance use - Coping Mechanisms Scale

Category	Extracted data
	<ul style="list-style-type: none"> • coping mechanisms, use of emotional support - Coping Mechanisms Scale • coping mechanisms, use of instrumental support - Coping Mechanisms Scale • coping mechanisms, positive reframing - Coping Mechanisms Scale • coping mechanisms, humor - Coping Mechanisms Scale • coping mechanisms, self-blame - Coping Mechanisms Scale • effort - Effort-Reward Scale • reward - Effort-Reward Scale • over-commitment - Effort-Reward Scale • work engagement, dedication - Work Engagement Scale • work engagement, absorption - Work Engagement Scale • work-family imbalance - Work-Family Conflict Scale <p>Time points measured and reported: 1) pre-intervention; 2) postintervention</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: We contacted the authors to get the information if the treatment duration was one week and if the time 2 assessment took place immediately postintervention or at 1-week follow-up.; no response to two inquiries</p> <p>Study start/end date: see trial registration: July 2016 to November 2016</p> <p>Funding source: see trial registration: Birkbeck College, University of London; RCT was not funded or determined by Focus Games or any organization involved with the app/board game</p> <p>Declaration of interest: After the RCT was completed, the authors and Focus Games transformed the intervention into an app that is currently being trialed in several NHS hospitals for use by doctors and other clinicians. The authors, Focus Games and the National Health Service Practitioner Health Programme also developed a board game for healthcare professionals. The RCT was not funded or determined by Focus Games or any organization involved with the app/board game. The RCT was conducted for PhD research and it took place a year before Focus Games got in touch with the authors.</p> <p>Ethical approval needed/obtained for study: approved by BEI (School of Business, Economics and Informatics) Ethics Committee at Birkbeck, University of London in May 2016; institutional ethics approval covering all data sources, and NHS local approval covering NHS trusts that agreed to invite their doctors to take part in the trial</p> <p>Comments by study authors: study protocol registered before the study began at the US National Institute of Health (Identifier: NCT02838290; ClinicalTrials.gov, 2016)</p> <p>Miscellaneous outcomes by the review authors: not relevant</p> <p>Correspondence: Dr. Asta Medisauskaite, Research Department of Medical Education, UCL Medical School, London, UK; a.medisauskaite@ucl.ac.uk</p>

Table D6.28

Mirzaeirad 2019

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power & sample size calculation, level of power achieved): according to a priori sample size calculation at least 34 persons required in each group according to similar studies</p> <p>Imputation of missing data: not specified</p>
Participants	<p>Country: Iran</p> <p>Setting: hospital (intervention performed in the place of hospital training courses)</p> <p>Age: 42 (52.5%) < 31 years, 28 (35%) > 31 years</p> <p>Sample size (randomized): 80 (after exclusions)</p> <p>Sex: 66 women, 14 men</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: not specified</p> <p>Population description: nurses</p> <p>Included criteria: 1) undergraduates with at least 1 year of hospital experience and specialty areas (operating room, children and emergency); 2) lack of physical disabilities or mental stress; 3) failure to receive interventions or classes related to stress reduction during the past year in the workplace; 4) absence of severe stress and emotional crisis (e.g., death of first-degree relatives during last year)</p> <p>Excluded criteria: 1) participants stating that they had any disabling physical and psychological problems; 2) unwillingness to co-operate or continue participating in the study</p> <p>Attrition (withdrawals and exclusions): 4 (IG = 2, CG = 2)</p> <p>Reasons for missing data: IG = lack of full participation in the workshop ($n = 2$); CG = change of location ($n = 1$), unwillingness to continue co-operation ($n = 1$)</p>
Interventions	<p>Intervention: resilience skills training ($n = 40$; after exclusions)</p> <ul style="list-style-type: none"> • <i>delivery</i>: face-to-face group setting; included lecture, question and answer method, skill group; training aids: film, slides, pamphlets, case sessions • <i>providers</i>: not specified (information that 2 nursing doctoral lecturers, one lecturer from psychology department at University of Social Welfare and Rehabilitation Sciences and 2 nursing staffs of the hospitals evaluated and finalized the intervention content) • <i>duration of treatment period and timing</i>: 4 sessions • <i>description</i>: <ul style="list-style-type: none"> ○ theoretical/educational content: communication skills training, confidence building, problem-solving, decision making, anger management ○ SESSION 1: <ul style="list-style-type: none"> ▪ a) target: referrals from participants, introduction to workshop goals, introduction to the principles of resilience skills, pretest assessment ▪ b) session details and activity description: 1. participants' references, 2. understand the goals and methods of intervention, 3. principles and introduction of resilience skills ○ SESSION 2: <ul style="list-style-type: none"> ▪ a) target: communication skills and its application, anger management skills

Category	Extracted data
	<ul style="list-style-type: none"> ▪ b) session details and activity description: 1. principles of communication, factors affecting therapeutic and professional communication, 2. anger management principles and procedures and anger management strategies ○ SESSION 3: <ul style="list-style-type: none"> ▪ a) target: confidence-building skills, problem solving skills in the workplace ▪ b) session details and activity description: 1. self-esteem site, provide ways to increase self-esteem, 2. concepts and principles of problem-solving, steps to using problem-solving ○ SESSION 4: <ul style="list-style-type: none"> ▪ a) target: ability to make decisions in the workplace, summary and conclusion, how to follow the training process, postintervention assessment ▪ b) session details and activity description: 1. define decision making, decision making methods and procedures, 2. design a position and make decisions • <i>compliance</i>: $n = 2$ excluded due to lack of full participation in the workshop • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>: no theoretical foundation specified; content of intervention extracted from sources of nursing management and existing papers (Antonovsky, 1987; Dehghan Nayeri, 2012; Henderson & Bonnie, 2007; McDonald et al., 2013; Rezaeiian, 2012) <p>Control: not specified ($n = 40$; after exclusions)</p>
Outcomes	<p>Outcomes collected and reported:</p> <ul style="list-style-type: none"> • perceived stress, that is, nursing stress - Nursing Stress Scale <p>Time points measured and reported: 1) pre-intervention; 2) postintervention; 3) 1-month follow-up (1 month postintervention)</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: We contacted the authors to get the information about the number of participants randomized to each group and to ask for the means and SDs for the outcome nursing stress in the two groups at each time point. In addition, we asked for the treatment duration in weeks/months and whether the authors performed a per-protocol analysis, but received no response to two inquiries.</p> <p>Study start/end date: not specified</p> <p>Funding source: not specified</p> <p>Declaration of interest: not specified</p> <p>Ethical approval needed/obtained for study: approved by Ethics Committee of the University of Social Welfare and Rehabilitation Sciences</p> <p>Comments by study authors: article is taken from the dissertation of Seiedeh Zahra Mirzaeirad at the University of Social Welfare and Rehabilitation Sciences (Moral Code 144.1394.REC.USWR.IR)</p> <p>Miscellaneous outcomes by the review authors: article in Persian (translated)</p> <p>Correspondence: Seiedeh Zahra Mirzaeirad; corresponding author: Narges Arsalani, Associate Professor, Department of Nursing, Faculty of Rehabilitation, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran; nargesarsalani@gmail.com</p>

Table D6.29

Mistretta 2018

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: according to report, clusters based on schedule availability; additional information received from authors (Mistretta, 2018): not multiple groups/clusters for each treatment; judged as misnamed study with individual randomization stratified for schedule availability</p> <p>Power (power sample size calculation, level of power achieved): not specified</p> <p>Imputation of missing data: not specified; intent-to-treat analysis</p>
Participants	<p>Country: USA</p> <p>Setting: Mayo Clinic (major tertiary healthcare institution)</p> <p>Age: mean = 46.0 (SD = 12.6, range = 22-80) years</p> <p>Sample size (randomized): 60</p> <p>Sex: 52 women, 8 men</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: average stress scores (Depression, Anxiety, and Stress Scales, DASS-21) suggested mild levels of stress (7.9 (3.5)); average scores for depression (DASS-21; 4.8 (3.7)) and anxiety (DASS-21; 4.0 (2.9)) fell within range, suggesting relatively little depression and anxiety; mean well-being WHO (Five) Well-Being Index, WHO-5) scores at baseline were 12.9 (4.1) indicating moderate levels of well-being; mean baseline score for the burnout subscales (Maslach Burnout Inventory-Human Services Survey, MBI-HSS) suggest moderate level of emotional exhaustion (23.9 (11.8)) that is above normative levels, a low level of depersonalization (5.5 (5.1)), and a moderate level of personal accomplishment (37.1 (6.4))</p> <p>Population description: employees at the Mayo Clinic in Arizona, a large research hospital and medical center</p> <p>Inclusion criteria: 1) being an employee working at Mayo Clinic, Arizona; 2) aged 18 years or older; 3) owning a smartphone; 4) scoring at least 5 on the DASS-21 stress subscale</p> <p>Exclusion criteria: not specified</p> <p>Attrition (withdrawals and exclusions): postintervention: 6 provided no postintervention data; 3-month follow-up: 16 provided no follow-up data with similar attrition rates across groups (IG1 = 6/22 (27.2%); IG2 = 5/23 (21.7%), CG = 5/15 (33.3%))</p> <p>Reasons for missing data: not specified</p>
Interventions	<p>Intervention 1: Mindfulness-Based Resilience Training (MBRT) (<i>n</i> = 22)</p> <ul style="list-style-type: none"> • <i>delivery</i>: face-to-face sessions; compact discs (CDs) and/or links to MP3 (MPEG Audio Layer-3) audio files containing guided mindfulness exercises to practice throughout the week; participants asked to complete MBRT daily logs regarding the frequency and type of mindfulness practice they engaged in • <i>providers</i>: facilitated by clinical psychologist/developer of MBRT; certified yoga instructor for mindful movement component • <i>duration of treatment period and timing</i>: 6 weekly 120-minute sessions; scheduled from 4:30 pm to 6:30 pm, which for many participants began during paid working hours (typically 8 am to 5 pm) • <i>description</i>: <ul style="list-style-type: none"> ○ incorporates two practices: learning mindfulness skills to deal effectively with unpleasant/unwanted thoughts or experiences; and learning resilience skills to foster positive growth and behavior in keeping with one's intentions and values

Category	Extracted data
	<ul style="list-style-type: none"> ○ sessions consisted of educating participants about the core concepts in mindfulness and resilience training, followed by experiential practice and group discussion ○ All classes included a mindful movement component taught by a certified yoga instructor. ○ SESSION 1: resilience – core concepts and research, attentional training – awareness of breath, informal practice ○ SESSION 2: awareness of breath – 10 minutes, mindfulness – core concepts and research, compassionate body scan ○ SESSION 3: coping with difficult physical sensations – core concepts, awareness of bodily pain/discomfort, compassion meditation ○ SESSION 4: coping with difficult emotions – core concepts, ABC's of MBRT, naming emotions meditation ○ SESSION 5: coping with unwanted thoughts/narratives – core concepts, fusion and diffusion, practicing with difficult thoughts/narratives meditation ○ SESSION 6: self-criticism and self-compassion, personalized resilience plan Incorporating intentions, mindfulness skills and resilience skills • <i>compliance</i>: not specified • <i>integrity of delivery</i>: not specified • <i>economic information</i>: \$2,500 per 6-week program (\$100 to \$180 per person, depending on the size of the group); participants were offered \$50 for completion of pre-, post-, and follow-up questionnaires • <i>theoretical basis</i>: incorporates aspects of Mindfulness-Based Stress Reduction (MBSR) and Acceptance and Commitment Therapy (ACT) but differs from both approaches, in that it includes shorter meditation practices and deeper discussion of the neurobiology of stress and resilience; training has been studied previously in transplant patients with positive results (Stonnington et al., 2016) although in the current study we eliminated the initial session of Stress Management Resilience Training for logistical reasons
	<p>Intervention 2: Smartphone Resilience Training ($n = 23$)</p> <ul style="list-style-type: none"> • <i>delivery</i>: smartphone app • <i>providers</i>: app provided by Soma Analytics (London, UK) • <i>duration of treatment period and timing</i>: every 7-10 days, participants were prompted to select one of four possible topics that they wanted to focus on for the next week • <i>description</i>: <ul style="list-style-type: none"> ○ app designed to provide users with data on their sleep and emotions so as to increase awareness of current levels of well-being as well as provide targets of potential change to individuals ○ topics users can choose: sleep, happiness and positivity, energy and focus, and productivity; topics aligned with the goals of falling asleep faster or feeling more refreshed, being happier, boosting energy and focus, or getting things done, respectively. Feeling less stressed served as an additional goal that contained a mixture of interventions from all topics. ○ TOPIC SLEEP: goal: fall asleep faster, feel more refreshed; content: pre-sleep routine, sleep environment, use of stimulants, exposure to natural light, impact of artificial light, physical exercise, rumination, nutrition

Category	Extracted data
	<ul style="list-style-type: none"> ○ TOPIC HAPPINESS POSITIVITY: goal: be happier; content: three good things, gratitude letter, signature strengths, negativity bias, going for a walk, physical exercise ○ TOPIC ENERGY FOCUS: goal: boost my energy and focus; content: mindfulness meditation, mindful rating, mindful email, post-lunch dip, willpower is a limited resource, no multi-tasking, physical exercise ○ TOPIC PRODUCTIVITY: goal: get things done; content: eat your frog, Eisenhower matrix, mindful email, no multi-tasking, Pareto's law, SMART goals (abbreviation not explained) ○ TOPIC MIXTURE OF TOPICS: goal: feel less stressed; content: mixture of interventions from all topics • <i>compliance</i>: not specified • <i>integrity of delivery</i>: not specified • <i>economic information</i>: estimated cost of \$20 to \$100 per user, depending on the product and level of personalization; participants were offered \$50 for completion of pre-, post-, and follow-up questionnaires • <i>theoretical basis</i>: all topics except sleep included some concepts related to mindfulness; smartphone application tested in an earlier pilot study with Mayo Clinic employees to evaluate its functionality <p>Control: no intervention (were offered training at the conclusion of trial) ($n = 15$)</p>
Outcomes	<p>Outcomes collected and reported:</p> <p><i>Primary outcome</i></p> <ul style="list-style-type: none"> • depression - DASS-21 • anxiety - DASS-21 • stress - DASS-21 • well-being - WHO-5 <p><i>Secondary outcome</i></p> <ul style="list-style-type: none"> • burnout, emotional exhaustion - MBI-HSS • burnout, depersonalization - MBI-HSS • burnout, personal accomplishment - MBI-HSS • self-compassion - Self-Compassion Scale • compassion for others - Compassion for Others Scale • daily affect - Ecological Momentary Assessment (EMA) • relationship to quality - EMA • valued action - EMA • sleep monitoring - EMA <p>Time points measured and reported: 1) pre-intervention; 2) postintervention; 3) 3-month follow-up (3 months postintervention)</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: We contacted authors to get more information about the cluster randomization (Mistretta, 2018).</p> <p>Study start/end date: not specified (April 2015 - March 2016 according to trial registration)</p> <p>Funding source: Mayo Clinic Arizona-Research Funds and Horizon 2020</p> <p>Declaration of interest: Christopher Lorenz is a Director of Soma Analytics.</p> <p>Ethical approval needed/obtained for study: approved by Mayo Clinic IRB</p> <p>Comments by authors: trial registration: ClinicalTrials.gov Registration number: NCT02419430; URL: https://clinicaltrials.gov/ct2/show/study/NCT02419430</p> <p>Miscellaneous outcomes by the review authors: information received from authors (Mistretta, 2018) that there were no multiple groups for each treatment and that ICCs could not be calculated.</p> <p>Correspondence: Erin G. Mistretta, Department of Psychology, Arizona State University, 950 S. McAllister Ave., Room 237, P.O. Box 871104, Tempe, AZ 85287;</p>

Category	Extracted data
	egmistretta@asu.edu; Trial registration: Cynthia Stonnington, MD, Associate Professor of Psychiatry, Mayo Clinic, Stonnington.Cynthia@mayo.edu

Table D6.30

NCT02603133

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: sequential assignment</p> <p>Unit of randomization: individuals</p> <p>Power (power sample size calculation, level of power achieved): not specified in trial registration</p> <p>Imputation of missing data: not specified</p>
Participants	<p>Country: USA</p> <p>Setting: neonatal intensive care unit (NICU)</p> <p>Age: not specified</p> <p>Sample size (randomized): 2650 (actual enrolment)</p> <p>Sex: not specified</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: not specified</p> <p>Population description: NICU healthcare professionals</p> <p>Method of recruitment: not specified</p> <p>Inclusion criteria: 1) age: 18-85 years; 2) location: newborn center, that is, the NICU or a step-down unit; 3) provider: a) primary work place is the Newborn Center, b) full time equivalent of $\geq 40\%$, c) date of hire more than 4 weeks prior to start of the intervention; 4) provider groups: a) attendings that identify your newborn center as their primary site of work (not physicians from satellite NICUs), b) NICU fellows, c) nurse practitioners, d) physician assistants, e) nurses, including nurse leadership (managers, educators), f) nurse assistant, g) respiratory care providers, h) transport specialists if primarily neonatal transport team, i) newborn center social worker, j) newborn center clerks, k) newborn center pharmacists, l) newborn center physical, occupational, speech, and developmental therapists, m) newborn center nutritionists, n) newborn center lactation consultants</p> <p>Exclusion criteria: 1) location: labor and delivery or the newborn nursery; 2) provider: work is delivered mostly outside the newborn center (this may affect providers who delivery services across the hospital such as residents, surgeons, anesthesia, consultants, nutritionists, physical therapists/occupational therapists (these are included if they are mostly dedicated to the newborn center); 3) float personnel; 4) those who do not speak English; 5) those who cannot operate computer or smart phone</p> <p>Attrition (withdrawals and exclusions): not specified</p> <p>Reasons for missing data: not specified</p>
Interventions	<p>Intervention: web-based implementation for the science of enhancing resilience (WISER 2.0) (n not specified)</p> <ul style="list-style-type: none"> • <i>delivery</i>: online (participants receive messages); individual • <i>providers</i>: self-guided • <i>duration of treatment period and timing</i>: <ul style="list-style-type: none"> ○ IG receives 10-day sequential (Seq) and 10-day non-sequential (NSeq) rollout of resilience tools; however, contradicting information in trial registration if cohort 1 receives both version of the intervention or either the Seq or NSeq version ○ Seq: tools are obtained on 10 consecutive days ○ NSeq: messages are received daily with exception of Thursdays, Fridays, and Saturdays • <i>description</i>: <ul style="list-style-type: none"> ○ resilience tools Three Good Things, Gratitude, Random Acts of Kindness, Awe, 1 Good Chat

Category	Extracted data
	<ul style="list-style-type: none"> ○ Three Good Things (3GT Tool): Participants reflect on "good things" that happened that day during evenings across 10 days. Participants are also able to voluntarily share their good things and read other participants' good things through the nightly anonymous log. By savoring good moments from earlier that day, participants are thought to shift from the natural focus on "what went poorly" due to negativity bias¹ to an appreciation for what went well. This shift in focus is thought to reduce rumination and depression symptoms. In prior research, 3GTs was found to increase happiness and decrease depression in internet participants.² In prior cohorts of 3GTs, we saw improvements in burnout, depression symptoms, work-life balance, and happiness. Participants also report benefiting from viewing nightly Three Good Things logs of others. ○ Gratitude (Grat Tool): Participants are offered the opportunity to cultivate gratitude toward others through a guided gratitude letter writing exercise.² Through expressing gratitude, we learn more about our vital connections to others, often in surprising and meaningful ways. Previous research has found that gratitude interventions increase well-being in a number of ways, particularly in boosting positive affect. ○ Random Acts of Kindness (RAK Tool): Participants report kind acts that they have committed, received, and/or witnessed, each day. By committing random acts of kindness participants experience a boost of positive emotions, and report lower negative affect. Recipients of acts of kindness benefit as well. ○ Awe (Awe Tool): This tool provides participants the opportunity to recount in detail one of their own experiences of awe, and encourages them to be on the lookout for new ones (even minor examples) over a few days. When we experience awe, our sense of time expands, we are kinder to others, we experience higher life satisfaction, and we prefer experiences over material things. ○ 1 Good Chat (Good Chat Tool): This tool uses the latest research on cultivating relationships and increasing social connection. Feeling socially connected is linked to health and well-being outcomes, including longevity.⁶ The 1 Good Chat tool asks participants to reflect on good conversations and to note the prosocial behaviors that he/she and the other person engaged in. <ul style="list-style-type: none"> • <i>compliance</i>: not specified • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>: no theoretical foundation specified <p>Control: wait-list control (n not specified); however, contradicting information in trial registration whether cohort 2 serves as wait-list control for cohort 1 vs receives lecture on safety culture (unrelated to burnout intervention) or both</p> <p>Outcomes collected and reported:</p> <p><i>Primary outcome</i></p> <ul style="list-style-type: none"> • NICU health professional resilience (burnout-emotional exhaustion) - shortened 4-item version of emotional exhaustion subscale of Maslach Burnout Inventory <p><i>Secondary outcome</i></p> <ul style="list-style-type: none"> • work-life balance - Work-Life Balance items adopted from College Activities and Behavior Questionnaire • depressive symptoms - Center for Epidemiological Studies Depression Scale-10-item version (positive screen: score ≥ 10)

Category	Extracted data
	<ul style="list-style-type: none"> happiness - Subjective Happiness Scale <p><i>Other outcome</i></p> <ul style="list-style-type: none"> safety and teamwork climate - safety and teamwork climate scales of Safety Attitudes Questionnaire (SAQ) (at 6 months, 12 months) clinical delays in patient care - single question; response scale matching the SAQ (at 6 months, 12 months) any health care associated infection - standardized Vermont Oxford Network data definitions for all clinical data during the birth hospitalization (at 12 months) voluntary nursing turnover - 3-item intention to leave index (at 12 months) conflicts with co-professionals - disruptive behavior index assessing prevalence of 15 distinct types of disruptive behaviors and extent to which they are managed well in given work setting (at 6 months, 12 months) <p>Outcomes reported not specified Time points measured and reported: 1) pre-intervention; 2) 10 days; 3) 1 month; 4) 6 months; 5) 12 months; time points reported not specified Adverse events: not specified</p>
Notes	<p>Contact with authors: We contacted the authors to get more information about the status of the trial (which changed from ongoing study to completed, but unpublished study during the review process) (Profit, 2018). We also asked for more information concerning the study design and the form of control group (one inquiry), but did not receive a response at the time of writing the review.</p> <p>Study start/end date: July 2016 to August 2018 (actual study completion date)</p> <p>Funding source: Stanford University; Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD); Duke University</p> <p>Declaration of interest: not specified</p> <p>Ethical approval needed/obtained for study: not specified</p> <p>Comments by authors: not specified</p> <p>Miscellaneous outcomes by the review authors: information received from authors: trial completed but unpublished (Profit, 2018); based on information in trial registration not clearly enough if two or three cohorts and if wait-list or active control (see lecture on safety culture) due to different information provided</p> <p>Correspondence: primary investigator: 1) Jochen Profit MD, Associate Professor of Pediatrics, Director of Perinatal Health Systems Research, Stanford University, USA; profit@stanford.edu; 2) J. Bryan Sexton, PhD; Duke University, USA</p>

Table D6.31

NCT03645798

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power & sample size calculation, level of power achieved): sample size calculation conducted via statistical software; effect size was 0.67, power was 0.80, and margin of error type I was 0.05; accordingly, sample size was 64</p> <p>Imputation of missing data: not specified in trial registration</p>
Participants	<p>Country: China</p> <p>Setting: nurses; online/mobile-based intervention (Wechat-based)</p> <p>Age: not specified</p> <p>Sample size (randomized): probably 102</p> <p>Sex: not specified</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: not specified</p> <p>Population description: nurses</p> <p>Included criteria: 1) registered nurses or licensed practical nurses; 2) who provide direct care to residents; 3) whose Maslach Burnout Inventory-General survey (MBI-GS) scores are no less than 1.5; 4) who do not take any hormone therapy; 5) are Chinese speakers</p> <p>Excluded criteria: 1) student nurses; 2) those who suffer from diseases that influence their hormone levels; 3) those who participated in similar studies; 4) those who have no interest in this study</p> <p>Attrition (withdrawals and exclusions): 102 nurses who met inclusion criteria and were randomly selected for study; only 73 participants completed the study (IG = 33; CG = 40)</p> <p>Reasons for missing data: not specified</p>
Interventions	<p>Intervention: wechat-based “Three good things” positive psychotherapy (after dropouts: <i>n</i> = 33)</p> <ul style="list-style-type: none"> • <i>delivery</i>: online-/mobile-based (Wechat intervention); combined setting (Wechat friends cycle; participants’ records of three good things can be open to others or only to researchers) • <i>providers</i>: probably mostly self-guided intervention (Wechat); researchers with responsibility to supervise the implementation of intervention and explain confusion of participants during intervention period • <i>duration of treatment period and timing</i>: 6 months (August 2015 – January 2016) • <i>description</i>: <ul style="list-style-type: none"> ○ participants directed to record 3 good things that went well each day in the Wechat friends cycle to maintain emphasis on the positive experience ○ Three good things can be minor, ordinary or important. ○ next to each good things, participants required to answer the question “Why did this good thing happen?” ○ record can be open to others or only open to researchers • <i>compliance</i>: not specified • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>: Positive psychotherapy <p>Control: TAU (after dropouts: <i>n</i> = 40)</p> <ul style="list-style-type: none"> • <i>delivery</i>: not specified • <i>providers</i>: psychologists

Category	Extracted data
	<ul style="list-style-type: none"> • <i>duration of treatment period and timing</i>: not specified • <i>description</i>: <ul style="list-style-type: none"> ○ normal psychological instruction from the hospital ○ convenient method set by the hospital; nurses who have stress or psychological problems can find help through this intervention • <i>compliance</i>: not specified • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>: not specified
Outcomes	<p>Outcomes collected and reported:</p> <p>Primary outcome:</p> <ul style="list-style-type: none"> • burnout (emotional exhaustion, cynicism, reduced professional efficacy) – MBI-GS <p>Secondary outcomes:</p> <ul style="list-style-type: none"> • resilience – Connor-Davidson Resilience Scale • self-efficacy – General Self-Efficacy Scale • coping styles/trait coping – Trait Coping Styles Scale <p>Other outcomes:</p> <ul style="list-style-type: none"> • turnover intention – Turnover Intention Scale • job satisfaction – Job Satisfaction Scale • job performance – Job Performance Scale • blood cortisol – blood samples <p>Outcomes reported not specified</p> <p>Time points measured and reported: 1) pre-intervention; 2) postintervention (i.e., immediately after 6-month intervention); time points reported not specified</p> <p>Adverse events: not specified in trial registration</p>
Notes	<p>Contact with authors: We contacted the authors to get the information if the trial was published in the meantime, but received no response to two inquiries.</p> <p>Study start/end date: see trial registration: July 2015 to January 2016</p> <p>Funding source: Central South University</p> <p>Declaration of interest: not specified</p> <p>Ethical approval needed/obtained for study: approval by IRB of Xiangya Nursing School, Central South University</p> <p>Comments by study authors: not specified</p> <p>Miscellaneous outcomes by the review authors: no information concerning publication status received from authors; corresponding study protocol and statistical analysis plan:</p> <p>https://clinicaltrials.gov/ProvidedDocs/98/NCT03645798/Prot_SAP_000.pdf</p> <p>Correspondence: Jingping Zhang (study director), Central South University, Changsha, Hunan, China, 410013; jpzhang1965@163.com</p>

Table D6.32

Poulsen 2015

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power sample size calculation, level of power achieved): Working from these bases, a medium effect size ($f = 0.4$), with $\alpha = 0.05$ and $\beta = 0.95$ was chosen because of the exploratory nature of this study and the clinical significance of even relatively moderate effects from training. With 2 groups of participants (IG and CG), a total sample of 64 was required, and therefore 80 participants were recruited to allow for dropouts and incomplete data sets.</p> <p>Imputation of missing data: no imputation of missing data; available-case analysis (only participants with complete data sets)</p>
Participants	<p>Country: Australia</p> <p>Setting: radiation oncology departments of 2 hospitals</p> <p>Age: 5 (7%) aged 25 years, 26 (37%) aged 25-35 years, 14 (20%) aged 36-45 years, 25 (36%) aged > 45 years (in analyzed sample; after exclusion of 10 participants)</p> <p>Sample size (randomized): 80</p> <p>Sex: 58 women, 12 men (in analyzed sample; after exclusion of 10 participants)</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: not specified</p> <p>Population description: radiation therapists and oncology nurses</p> <p>Inclusion criteria: 1) being a radiation therapist or an oncology nurse; no gender, religious or racial restrictions</p> <p>Exclusion criteria: not specified</p> <p>Attrition (withdrawals and exclusions): 10/40 (25%) participants in IG only excluded from analysis</p> <p>Reasons for missing data: incomplete data sets</p>
Interventions	<p>Intervention: written educational material + recovery training program/workshop on recovery from job stress ($n = 40$)</p> <ul style="list-style-type: none"> • <i>delivery</i>: written educational material + face to face, interventional workshop with practical exercises and interactive discussions • <i>providers</i>: not specified • <i>duration of treatment period and timing</i>: 1 day • <i>description</i>: <ul style="list-style-type: none"> ○ workshop on recovery self-care practices: recovery training program developed by Hahn and colleagues was expanded and tailored for cancer care workers. ○ additional material about peer mentoring during goal-setting using mental contrasting with implementation intentions was provided to increase social support for uptake of healthy self-care practices ○ intervention expanded the four recovery pathways used by Hahn and colleagues to include a module on social support during goal-setting, using the vehicle of peer mentoring • <i>compliance</i>: not specified • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>: recovery training program developed by Hahn et al. (2011) was expanded and tailored for cancer care workers (Hahn et al., 2011; Kram & Isabella, 1985; Oettingen et al., 2000) <p>Control: active control (written educational information-only) ($n = 40$)</p> <ul style="list-style-type: none"> • <i>delivery</i>: written information

Category	Extracted data
	<ul style="list-style-type: none"> • <i>providers</i>: not specified • <i>duration of treatment period and timing</i>: not specified • <i>description</i>: educational material about recovery, self-care practices • <i>compliance</i>: not specified • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>: not specified
Outcomes	<p>Outcomes collected and reported:</p> <ul style="list-style-type: none"> • recovery - Recovery Experiences Questionnaire • satisfaction with self-care practices - single item • perceived sleep quality - single item <p>Time points measured and reported: 1) pre-intervention; 2) at the end of every week (during 6 weeks); 3) 6-week follow-up (6 weeks postintervention: 1-day intervention; at the end of the 6-week period); time points during 6 weeks indirectly reported in MANOVAs and for REQ in figure</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: no correspondence required</p> <p>Study start/end date: not specified</p> <p>Funding source: funded by the Princess Alexandra Hospital Research Foundation</p> <p>Declaration of interest: conflict of interest: Anne A. Poulsen is Director of Work Life Balance Solutions (Queensland).</p> <p>Ethical approval needed/obtained for study: ethical clearance obtained from the Hospital Ethics Committee, which oversaw research at the two hospitals where the ONs and RTs worked</p> <p>Comments by authors: not specified</p> <p>Miscellaneous outcomes by the review authors: not relevant</p> <p>Correspondence: Dr. Anne A. Poulsen, Mater Medical Research Institute, 31 Raymond Tce, South Brisbane, Queensland 4101, Australia; a.poulsen@uq.edu.au</p>

Table D6.33

Schroeder 2016

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power sample size calculation, level of power achieved): not specified</p> <p>Imputation of missing data: no imputation of missing data; per-protocol analysis (only participants who took part in allocated intervention) and available case analysis (only participants for whom outcomes were obtained at three time points)</p>
Participants	<p>Country: USA</p> <p>Setting: family medicine and internal medicine departments at Providence Health and Services in Portland, Oregon</p> <p>Age: mean = 42.76 (SD = 8.43, range = 32-61) years</p> <p>Sample size (randomized): 33</p> <p>Sex: 24 women, 9 men</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: Maslach Burnout Inventory (MASL): burnout, emotional exhaustion: IG = 26.68 (8.48), CG = 24.52 (10.57); burnout, depersonalization: IG = 20.87 (8.42), CG = 19.47 (7.90); burnout, personal accomplishment: IG = 40.25 (5.92), CG = 37.52 (6.43)</p> <p>Population description: primary care physicians from the family medicine and internal medicine departments at Providence Health and Services in Portland, Oregon</p> <p>Inclusion criteria: 1) employed as a primary care physician by Providence Medical Group (PMG); 2) working at least 30% time in direct patient care; 3) aged between 25 and 75 years; 4) willing to be randomized to the IG or CG; 5) no prior participation in the same mindfulness-based intervention (MBI) offered at PMG</p> <p>Exclusion criteria: not specified</p> <p>Attrition (withdrawals and exclusions): after randomization: 2 withdrawals (IG = 1/16 (6.3%), CG = 1/17 (5.9%)); postintervention assessment: 2 withdrawals in CG only (2/17 (11.8%)); follow-up assessment: 3 withdrawals (IG = 2/16 (12.5%), CG = 1/17 (5.9%))</p> <p>Reasons for missing data: after randomization: lack of time or scheduling conflicts; at postintervention assessment or at follow-up assessment: not specified</p>
Interventions	<p>Intervention: Mindful Medicine Curriculum (MMC) (<i>n</i> = 16)</p> <ul style="list-style-type: none"> • <i>delivery</i>: face-to-face; group setting (mindfulness retreat) • <i>providers</i>: Instructors have extensive experience in secular MBIs and familiarity with the culture of physicians. • <i>duration of treatment period and timing</i>: 13-hour weekend training program + 2-hour follow-up sessions at 2 and 4 weeks after the weekend • <i>description</i>: <ul style="list-style-type: none"> ○ modified version of Mindfulness-Based Stress Reduction (MBSR), with added elements of compassion skills training, brief mindfulness techniques designed to be used at work, and “SLO conversation” exercises where participants practice applying mindfulness to the core clinical skills of speaking, listening, and observing (SLO) ○ key to the MMC: introduction to mindfulness that is relevant to the professional contexts in which physicians work, hence emphasizing the physicians’ ability to incorporate mindfulness and compassion into interpersonal relationships

Category	Extracted data
	<ul style="list-style-type: none"> • <i>compliance</i>: $n = 1$ of $n = 16$ allocated to IG did not receive allocated intervention due to scheduling conflict • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>: similar to the protocol used by Fortney et al. (2013); modified version of MBSR; Fortney et al. (2013) developed a substantially abbreviated weekend immersion MBI with 2 brief follow-up sessions for primary care providers (already tested in uncontrolled pilot study, 30 primary care providers reported reduction in burnout, depression, anxiety, perceived stress; effects maintained over 9 months postintervention)
	Control: wait-list control ($n = 17$)
Outcomes	<p>Outcomes collected and reported:</p> <ul style="list-style-type: none"> • resilience - Brief Resilience Scale • perceived stress - Perceived Stress Scale • burnout, emotional exhaustion - MASL • burnout, depersonalization - MASL • burnout, personal achievement - MASL • compassion - Santa Clara Brief Compassion Scale • mindfulness - Mindfulness Attention Awareness Scale • patient self-reported satisfaction with primary care physician - Doctor Communication Composite and Overall Doctor Rating • meditation practice (only in IG at 3-month follow-up) - Meditation Practice Questionnaire <p>Time points measured and reported: 1) pre-intervention; 2) postintervention (within 1 week after weekend-long intervention); 3) 3-months follow-up (3 months postintervention)</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: no correspondence required</p> <p>Study start/end date: recruitment and data collection between December 2014 and May 2015</p> <p>Funding source: funded by Providence Health System Clinical Transformation Council</p> <p>Declaration of interest: not specified</p> <p>Ethical approval needed/obtained for study: approved by the Providence Health and Services IRB</p> <p>Comments by authors: not specified</p> <p>Miscellaneous outcomes by the review authors: not relevant</p> <p>Correspondence: Michael S. Christopher, PhD, School of Professional Psychology, Pacific University, 190 SE 8th Avenue, Suite 260, Hillsboro, OR 97123; mchristopher@pacificu.edu</p>

Table D6.34

Smith 2019

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power & sample size calculation, level of power achieved): planned sample size was 40 ($n = 29$ in conference abstract)</p> <p>Imputation of missing data: not specified in conference abstract</p>
Participants	<p>Country: Canada</p> <p>Setting: critical care and trauma nurses at St Michael's (tertiary academic hospital in Toronto); exact training setting not specified</p> <p>Age: mean = 33 years</p> <p>Sample size (randomized): 29</p> <p>Sex: 26 women, 3 men</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: not specified</p> <p>Population description: nurses in critical care and trauma settings/acute care nurses</p> <p>Included criteria: see trial registration; 1) nurse in the medical-surgical and trauma-neurosurgical intensive care units (MSICU (medical surgical intensive care unit) and TNICU (trauma and neurosurgery intensive care unit) and the medical/surgical floor; 2) full-time or part-time employment status; 3) approval of clinical leader manager; 4) receipt of written informed consent</p> <p>Excluded criteria: see trial registration; 1) casual employment status; 2) inability to attend intervention days</p> <p>Attrition (withdrawals and exclusions): not specified</p> <p>Reasons for missing data: not specified</p>
Interventions	<p>Intervention: wellness intervention ARISE ($n = 16$)</p> <ul style="list-style-type: none"> • <i>delivery</i>: face-to-face group setting (full-day and half-day interactive workshop) + online group setting (closed Facebook group and online mindfulness sessions via Zoom) • <i>providers</i>: full-day workshop facilitated by Employee Assistance Provider (EAP) • <i>duration of treatment period and timing</i>: 1.5-day workshops (full-day 7.5-hour workshop); half-day 3.75-hour workshop); 3 months peer support (Facebook group); five 90-minute mindfulness sessions • <i>description</i>: <ul style="list-style-type: none"> ○ 1) FULL-DAY INTERACTIVE WORKSHOP: resilience-focused seminar; resilience-focused activities and self-care techniques; introduction to self-care and self-care techniques including yoga and stretches, stress relief using the senses and mindfulness; reflective writing ○ 2) HALF-DAY WORKSHOP: reinforced/focused on the following self-care techniques: mindfulness, yoga and stretching, and creative and reflective reading and writing; introduction to hospital-based resources for wellness and employee and family assistance including EAP and health and wellness offerings ○ 3) PEER SUPPORT through social media engagement (closed Facebook group to bolster workshop content) for 3 months postintervention participation ○ 4) 5 online, instructor-guided MINDFULNESS SESSIONS (Zoom)

Category	Extracted data
	<ul style="list-style-type: none"> • <i>compliance</i>: not specified in conference abstract, but all ARISE group participants agreed the workshop content, tools, and techniques could be used to manage stress • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>: multi-modal intervention according to trial registration <p>Control: no intervention ($n = 13$)</p> <ul style="list-style-type: none"> • <i>compliance</i>: not specified
Outcomes	<p>Outcomes collected and reported:</p> <ul style="list-style-type: none"> • resilience - Connor Davidson Resilience Scale - reported in conference abstract • acute occupational fatigue - Occupational fatigue and recovery (OFER) subscale • inter-shift recovery - OFER subscale • burnout - Professional Quality of Life (ProQOL5) scale - reported in conference abstract • compassion satisfaction - ProQOL5 scale - reported in conference abstract • secondary trauma - ProQOL5 scale - reported in conference abstract • perceived stress - Perceived Stress Scale • occupational coping self-efficacy for nurses - Occupational Coping Self-Efficacy Questionnaire for Nurses • mindfulness - Mindfulness Attention Awareness Scale <p>Time points measured and reported: 1) pre-intervention; 2) 1-month follow-up (1 month postintervention); 3) 3-month follow-up (3 months postintervention); reported in conference abstract: changes between pre-intervention and 1-month follow-up (resilience, burnout, compassion satisfaction, secondary trauma) and pre-intervention and 3-month follow-up (resilience)</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: We contacted the authors to get the information if the study was already published (Smith, 2019).</p> <p>Study start/end date: according to trial registration: February 2017 to October 2017</p> <p>Funding source: sponsor according to trial registration: St. Michael's Hospital, Toronto</p> <p>Declaration of interest: not specified in trial registration or conference abstract</p> <p>Ethical approval needed/obtained for study: not specified in trial registration or conference abstract</p> <p>Comments by study authors: trial registration: NCT03017469</p> <p>Miscellaneous outcomes by the review authors: conference abstract; presented at 2019 48th Critical Care Congress of SSCM (Society of Critical Care Medicine), San Diego; manuscript in preparation according to authors</p> <p>Correspondence: Orla Smith, PhD, Li Ka Shing Knowledge Institute, St. Michael's Hospital, Toronto, Canada; SmithO@smh.ca; Tel: 416-864-6060 ext. 3179</p>

Table D6.35

Sood 2011

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power sample size calculation, level of power achieved): A sample size of 40 was selected for this pilot study after weighing statistical considerations along with logistical and resource constraints. In general, for a continuous outcome variable, a sample size of 40 provides statistical power (2-tailed, $\alpha = 0.05$) of > 85% to detect a difference of 1 SD between groups.</p> <p>Imputation of missing data: no imputation of missing data; per-protocol analysis with participants who complied with allocated intervention and for whom outcomes were obtained</p>
Participants	<p>Country: USA</p> <p>Setting: Department of Medicine Faculty, clinic</p> <p>Age: IG mean = 46.8 (SD = 8.3) years, CG mean = 50.2 (SD = 5.7) years (unclear for total sample as number of participants considered for baseline characteristics not specified)</p> <p>Sample size (randomized): 40</p> <p>Sex: comparable gender distribution across two study arms (IG = 55% males; CG = 50% males)</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: anxiety (Smith Anxiety Scale, SAS): IG = 55.2 (13.6), CG = 50.5 (23.0)</p> <p>Population description: physicians of Department of Medicine Faculty, all academic clinicians</p> <p>Inclusion criteria: 1) being a faculty member of the Department of Medicine; 2) being able and willing to participate</p> <p>Exclusion criteria: 1) a recent (within the past 6 months) psychotic episode; 2) clinically significant, acute, unstable neurological, psychiatric, hepatic, renal, cardiovascular, or respiratory disease that prevented participation in the study</p> <p>Attrition (withdrawals and exclusions): of the 40 enrolled, 32 (80%) physicians completed the study; 8/20 (40%) participants in the CG declined to participate after randomization and prior to filling out any assessments</p> <p>Reasons for missing data: scheduling issues in CG</p>
Interventions	<p>Intervention: Stress Management and Resiliency Training (SMART) ($n = 20$)</p> <ul style="list-style-type: none"> • <i>delivery</i>: face-to-face; individual setting • <i>providers</i>: not specified • <i>duration of treatment period and timing</i>: single 90-minute session, optional 30–60-minute follow-up session depending on individual needs • <i>description</i>: attention training is instruction to help participants direct their interpretations away from fixed prejudices toward a more flexible disposition while cultivating skills such as gratitude, compassion, acceptance, forgiveness, and higher meaning; brief structured relaxation intervention (paced breathing meditation) • <i>compliance</i>: All 20 participants completed the 90-minute training; 4 participants participated in an additional 30-min session. • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>: adapted from Attention and Interpretation Therapy (AIT); AIT is a structured therapy developed at the Mayo Clinic to decrease stress and enhance resilience; addresses two aspects of human experience, attention and interpretation; AIT guides learners to delay judgment and pay greater attention to the novelty of the world

Category	Extracted data
	Control: wait-list control ($n = 20$) <ul style="list-style-type: none"> <i>compliance</i>: 8 participants declined to participate after randomization; did not receive the intervention
Outcomes	Outcomes collected and reported: <i>Primary outcome</i> <ul style="list-style-type: none"> resilience - Connor-Davidson Resilience Scale perceived stress - Perceived Stress Scale anxiety - SAS quality of life - Linear Analog Self-Assessment Scale fatigue - Visual Analog Scale Fatigue Time points measured and reported: 1) pre-intervention; 2) 2-month follow-up (8 weeks after single session intervention) Adverse events: not specified
Notes	Contact with authors: no correspondence required Study start/end date: not specified Funding source: Department of Medicine, Mayo Clinic, Rochester, MN Declaration of interest: none disclosed Ethical approval needed/obtained for study: study protocol reviewed and approved by Mayo Foundation IRB Comments by authors: not specified Miscellaneous outcomes by the review authors: not relevant Correspondence: Amit Sood, MD, Complementary and Integrative Medicine Program, Division of General Internal Medicine, Mayo Clinic, 200 First Street SW, Rochester, MN 55905, USA; sood.amit@mayo.edu

Table D6.36

Sood 2014

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power sample size calculation, level of power achieved): A sample size of 40 was calculated after weighing statistical and logistical considerations. To detect a difference between groups with a 2-sided, 5% significance level and power of 85% using continuous outcomes, a sample size of 20 participants per group was necessary; level of power achieved not specified</p> <p>Imputation of missing data: for 4 participants (IG = 2, CG = 2) who did not complete the week 12 assessments, baseline values were carried forward to week 12, to provide the most conservative estimate of efficacy; intent-to-treat analysis</p>
Participants	<p>Country: USA</p> <p>Setting: Department of Radiology, Mayo Clinic, Rochester</p> <p>Age: mean = 47.8 (SD = 7.09) years</p> <p>Sample size (randomized): 26</p> <p>Sex: 11 women, 15 men</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: not specified</p> <p>Population description: faculty members of the Department of Radiology at Mayo Clinic (physicians or scientists)</p> <p>Inclusion criteria: 1) staff members (physicians or scientists) within the Department of Radiology; 2) able and willing to participate in all aspects of the study; 3) able to understand and sign the informed consent</p> <p>Exclusion criteria: 1) a psychotic episode within the previous 6 months; 2) clinically significant, acute, unstable neurological, psychiatric, hepatic, renal, cardiovascular, or respiratory disease that would prevent participation in the study</p> <p>Attrition (withdrawals and exclusions): 4 (IG = 2/13 (15.4%), CG = 2/13 (15.4%)) completed the baseline questionnaires but did not complete the 12-week questionnaires</p> <p>Reasons for missing data: scheduling issue</p>
Interventions	<p>Intervention: Stress Management and Resiliency Training (SMART) ($n = 13$)</p> <ul style="list-style-type: none"> • <i>delivery</i>: face-to-face small-group session (with PowerPoint slide presentation); reading materials that covered the skills discussed; optional phone calls • <i>providers</i>: not specified • <i>duration of treatment period and timing</i>: single 90-minute session; brief structured relaxation intervention (practice deep diaphragmatic breathing once or twice a day); optional 30-60-minute follow-up session; two optional follow-up phone calls at weeks 4 and 8 • <i>description</i>: <ul style="list-style-type: none"> ○ SMART program teaches learners to focus their attention in the external world and to defer unrefined judgments. Learners also are taught to cultivate and guide their interpretations by five higher-order principles: gratitude, compassion, acceptance, meaning, and forgiveness. ○ brief structured relaxation intervention (paced breathing meditation --> guided to practice deep diaphragmatic breathing at five breaths per minute for 5 or 15 minutes, once or twice a day) ○ optional 30-60-minute follow-up session and two follow-up phone calls

Category	Extracted data
	<ul style="list-style-type: none"> • <i>compliance</i>: all 13 participants completed the initial 90-minute group training; 8 participants participated in an additional 30-minute follow-up session and phone calls • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>: abbreviated adaptation of Attention and Interpretation Therapy (AIT); AIT developed as a scientific and structured program at Mayo Clinic Rochester to decrease personal stress and enhance resiliency. AIT and SMART focus on two aspects of human experience: attention and interpretation. Human attention prioritizes focus on threats. These threats, in modern times, are often symbolic psychological threats (hurts, regrets, worries, and fears) that draw attention away from the present moment. This predisposes to ruminative thinking, avoidance, and ineffective thought suppression, all contributing to stress.
Outcomes	<p>Control: wait-list control ($n = 13$)</p> <p>Outcomes collected and reported:</p> <p><i>Primary outcome</i></p> <ul style="list-style-type: none"> • resilience - Connor-Davidson Resilience Scale • perceived stress - Perceived Stress Scale • anxiety - Smith Anxiety Scale • quality of life - Linear Analog Self-Assessment Scale • mindfulness - Mindful Attention Awareness Scale <p>Time points measured and reported: 1) pre-intervention; 2) 3-month follow-up (3 months after single session intervention, at week 12)</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: no correspondence required</p> <p>Study start/end date: enrolment for the study ran from April 2010 to May 2011; end date not specified</p> <p>Funding source: supported by a Mayo Clinic Department of Radiology Small Grant No.94147001 and gift from Terrance D. and Judith A. Paul</p> <p>Declaration of interest: not specified</p> <p>Ethical approval needed/obtained for study: study protocol was reviewed and approved by the IRB</p> <p>Comments by authors: study methods overlap with those described in previously published studies</p> <p>Miscellaneous outcomes by the review authors: not relevant</p> <p>Correspondence: Varun Sharma, MD, Division of General Internal Medicine, Mayo Clinic, 200 First Street SW, Rochester, MN 55905; vdsharma.md@gmail.com</p>

Table D6.37

Stetz 2007

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power sample size calculation, level of power achieved): not specified for final report</p> <p>Imputation of missing data: not specified</p>
Participants	<p>Country: USA</p> <p>Setting: volunteers attending medical class at Fort Rucker, Alabama; Fort Drum, New York; or Fort Benning, Georgia (i.e., army); training in research laboratory</p> <p>Age: see Population description; 35 (60%) under the age of 30 years old</p> <p>Sample size (randomized): 63</p> <p>Sex: 16 women, 47 men</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline screening: none of the participants showed high rates of post-traumatic stress disorder (PTSD) at baseline; 3 main PTSD symptoms reported as “moderately” or “quite a bit” (p. 243): “Repeated, disturbing dreams of a stressful military experience” (26%); “Repeated, disturbing memories, thoughts, or images of a stressful military experience?” (25%); “Feeling as if your future will somehow be cut short.”; about 10 to 20% of participants reported similar levels of stress across the remaining items</p> <p>Population description: volunteers who were attending a combat medical class (military medical personnel)</p> <p>Inclusion criteria: 1) only volunteers who showed normal oral temperature (e.g., temperature between 98.2 and 98.6 degrees Fahrenheit, see Shoemaker, 1996); 2) only volunteers showing low stress symptoms on the Post Traumatic Stress Disorder Checklist– Military version (PCL-M scores less than 4 and 5 on each item)</p> <p>Exclusion criteria: not specified</p> <p>Attrition (withdrawals and exclusions): not specified</p> <p>Reasons for missing data: not specified</p>
Interventions	<p>Intervention 1: Virtual Reality-Stress Inoculation Training (VR-SIT) (<i>n</i> = 18)</p> <ul style="list-style-type: none"> • <i>delivery</i>: virtual reality (VR) scenarios/games • <i>providers</i>: not specified • <i>duration of treatment period and timing</i>: 2 or 4 VR sessions • <i>description</i>: <ul style="list-style-type: none"> ○ “Combat Medic” scenario: in this environment, “medics” have to decide when to shoot and when to treat; they only have about 3 minutes to triage, treat casualties on ground, administer intravenous fluids, morphine, chest seals, and call for MEDEVAC (medical evacuation) help ○ “Flight Medic” scenario: participants have to treat a similar casualty but inside a helicopter that is facing turbulence and on its way to the next level of care (e.g., medical facility) • <i>compliance</i>: not specified • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>: stress inoculation; VR scenarios/games were created by the Virtual Reality Medical Center (VRMC) <p>Intervention 2: Coping training (CT) (<i>n</i> = 18)</p> <ul style="list-style-type: none"> • <i>delivery</i>: participants sitting in noise-proof chamber in the dark and wear a head mounted display while being guided

Category	Extracted data
	<ul style="list-style-type: none"> • <i>providers</i>: research staff who monitors and guides participants outside of the chamber • <i>duration of treatment period and timing</i>: 2 or 4 CT sessions • <i>description</i>: <ul style="list-style-type: none"> ○ participants instructed to either breathe or tense a body part per Progressive Muscle Relaxation (PMR) and Controlled Breathing (CB) technique ○ CB: individuals typically asked to inhale through their noses for a few seconds, hold momentarily, and then exhale slowly through their mouths • <i>compliance</i>: not specified • <i>integrity of delivery</i>: not specified • <i>economic information (intervention cost, changes in other costs as result of intervention)</i>: not specified • <i>theoretical basis</i>: PMR; CB <p>Intervention 3: combination of VR-SIT and CT ($n = 18$)</p> <ul style="list-style-type: none"> • <i>delivery</i>: See IG1 and IG2: VR scenarios/games; participants sitting in noise-proof chamber in the dark and wear a head mounted display while being guided • <i>providers</i>: see IG1 and IG2: for VR part not specified; IG2: research staff who monitors and guides participants outside of the chamber • <i>duration of treatment period and timing</i>: combination of a CT and a VR session • <i>description</i>: <ul style="list-style-type: none"> ○ see IG1 and IG2 ○ “Combat Medic” scenario: in this environment, “medics” have to decide when to shoot and when to treat; they only have about 3 minutes to triage, treat casualties on ground, administer intravenous fluids, morphine, chest seals, and call for MEDEVAC help ○ “Flight Medic” scenario: participants have to treat a similar casualty but inside a helicopter that is facing turbulence and on its way to the next level of care (e.g., medical facility) ○ participants instructed to either breathe or tense a body part per PMR and CB technique • <i>compliance</i>: not specified • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>: stress inoculation; VR scenarios/games were created by the VRMC; PMR; CB <p>Control: no intervention ($n = 9$)</p>
Outcomes	<p>Outcomes collected and reported:</p> <ul style="list-style-type: none"> • psychological stress, depression - Multiple Affect Adjective Check List-Revised (MAACL-R) • psychological stress, anxiety - MAACL-R - reported • psychological stress, hostility - MAACL-R - reported • psychological stress, positive affect - MAACL-R • psychological stress, sensation seeking - MAACL-R - reported • psychological stress, dysphoria - MAACL-R - reported • presence - Presence Questionnaire (PQ; also specified in Stetz et al., 2007; preliminary data with 25 medics) • biochemical stress, salivary amylase test - Salivary Amylase Kit (also specified in Stetz et al., 2007; preliminary data with 25 medics) - reported • physiological stress, body temperature - PhysioLab (also specified in Stetz et al., 2007; preliminary data with 25 medics)

Category	Extracted data
	<ul style="list-style-type: none"> • physiological stress, breathing rate - PhysioLab (also specified in Stetz et al., 2007; preliminary data with 25 medics) • physiological stress, pulse rate - PhysioLab (also specified in Stetz et al., 2007; preliminary data with 25 medics) <p>Time points measured and reported: presence (PQ) after each VR session; MAACL-R before and after each session; salivary amylase test before and after each exposure; PhysioLab monitoring throughout the session; time points reported: no single time points reported, only results from MANOVA</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: We contacted the authors to ask about the randomization process and received the information that a list was generated and a number to randomly select was computed with SPSS (Stetz, 2018). We contacted the authors another time to ask for the level of attrition in each group and the means and SDs for the outcome measures at each time point, but they had not responded to this inquiry at the time of writing.</p> <p>Study start/end date: January to June 2007</p> <p>Funding source: funded through the Army Medical Department Advanced Medical Technology Initiative, Telemedicine and Advanced Technology Research Center, US Army Medical Research and Materiel Command, Fort Detrick, Maryland</p> <p>Declaration of interest: not specified</p> <p>Ethical approval needed/obtained for study: not specified</p> <p>Comments by authors: not specified</p> <p>Miscellaneous outcomes by the review authors: Stetz 2007 and Stetz 2008 are 2 reports on the same study; Stetz 2007 reports preliminary data on $n = 25$ medics</p> <p>Correspondence: MAJ Melba Stetz, PhD, Research Director, Psychology Department, Tripler Army Medical Center, Hawaii; Melba.Stetz@us.army.mil; , Tel: +1/ 808-433-1651</p>

Table D6.38

Strijk 2011

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power sample size calculation, level of power achieved): sample size calculation based on differences between the IG and CG with regard to changes in mean vitality score, measured by the Utrecht Engagement Scale (UWES). Based on a study among 10,000 Dutch and Belgian employees, the baseline mean vitality score (range = 0-6) was assumed to be 3.99 (SD = 1.11). For the sample size needed, a difference in the vitality mean score of 10% between the IG and CG after six months was considered relevant. This means an average difference in the vitality mean score of 0.4 (SD = 1.2) between both study groups. Assuming $\alpha = 0.05$, power = 0.90, and two-sided tests, 189 participants per group were needed. Taking into account a loss of follow-up of 15%, a sample size of 446 employees (223 employees in each group) needed to be included.</p> <p>Imputation of missing data: complete case analysis with complete cases (Strijk 2013; second reference to Strijk et al., 2011): 500 workers who completed questionnaire at baseline and at 12 months; Strijk 2012 (Strijk et al., 2011): 575 workers who completed questionnaire at baseline and at 6 months); multiple imputation based on multivariate imputation by chained equations for intent-to-treat analysis (sensitivity analysis)</p>
Participants	<p>Country: The Netherlands</p> <p>Setting: academic hospitals</p> <p>Age: mean = 52.4 (SD = 4.85) years</p> <p>Sample size (randomized): 730</p> <p>Sex: 551 women, 179 men</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: mental health (36-Item Short Form Survey Instrument): IG = 75.2 (14.8), CG = 77.6 (13.4) (score > 76.8 considered as good)</p> <p>Population description: all workers aged ≥ 45 years from two academic hospitals</p> <p>Inclusion criteria: workers were eligible if 1) aged ≥ 45 years; 2) worked ≥ 16 hours a week; 3) gave written informed consent; 4) had no risk of developing adverse health effects when becoming physically active (as assessed by the Physical Activity Readiness Questionnaire)</p> <p>Exclusion criteria: not specified</p> <p>Attrition (withdrawals and exclusions): postintervention (at 6 months) = 155 lost to follow-up (IG = 74/367 (20.2%); CG = 81/363 (22.3%)); 6-month follow-up = 230 lost to follow-up (IG = 117/367 (31.9%); CG = 113/363 (31.1%))</p> <p>Reasons for missing data: postintervention: no time ($n = 25$), no interest/motivation ($n = 10$), health problems ($n = 9$), change of job ($n = 5$), other ($n = 13$), unknown reasons ($n = 93$); 6-month follow-up (12 months after baseline): no time ($n = 34$), no interest/motivation ($n = 17$), health problems ($n = 13$), change of job ($n = 6$), other ($n = 52$), unknown ($n = 108$)</p>
Interventions	<p>Intervention: written information + Vital@Work intervention (Worksite lifestyle intervention (Vitality exercise program, VEP)) ($n = 367$)</p> <ul style="list-style-type: none"> • <i>delivery</i>: written information; VEP: face-to-face guided group sessions (max. 16 persons); aerobic exercising without face-to-face instruction; face-to-face individual sessions (coaching) • <i>providers</i>: <ul style="list-style-type: none"> ○ yoga sessions: qualified yoga instructor; workout sessions: certified fitness instructors

Category	Extracted data
	<ul style="list-style-type: none"> ○ coach visits: personal vitality coach (during 4h training session, Personal Vitality Coach (PVC) protocol and accompanying materials, such as coaching registration forms, explained to coaches); at Amsterdam location: PVC visits provided by 3 coaches (2 human movement scientists, 1 health scientist); at Leiden location: PVC visits provided by 3 physical therapists; all coaches with experience with sport exercise training • <i>duration of treatment period and timing</i>: 6 months in total (2 weekly guided 45-minute sessions (yoga, workout), 1 weekly session exercising, 3 30-minute coach visits at start of intervention and followed by two consecutive visits 4–6 weeks and 10–12 weeks after first visit) • <i>description</i>: <ul style="list-style-type: none"> ○ written information: information about a healthy lifestyle in general (i.e., diet, physical activity, and relaxation) ○ VEP: 1) WEEKLY GUIDED YOGA GROUP SESSIONS: aimed at relaxation exercises; based on Hatha yoga (i.e., asana, pranayama, and relaxation exercises); included exercises consisting of a) relaxation and preparation postures for the hips, shoulders, neck, feet, and hands while focusing on breathing, b) series of standing postures, forward bending postures and twists, and light back-bending postures, and c) total relaxation (i.e., the “Savasana Corpse” pose) and meditation ○ 2) WEEKLY GUIDED AEROBIC WORKOUT GROUP SESSIONS: aimed at improving aerobic fitness and increasing muscle strength; consisted of a warm-up followed by aerobic exercises, resistance training, and cooling down; intensity of workout had to be 65–90% of the age-predicted maximum heart rate; resistance training was progressive in nature and provided stimulus to all major muscle groups; at the guided group sessions of the VEP: FREE PROVISION OF FRUIT ○ 3) older workers asked to perform vigorous physical activity without face-to-face instruction (e.g., fitness, spinning, distance running) for ≥ 45 minutes once a week ○ 4) COACH VISITS: <ul style="list-style-type: none"> ▪ aimed at changing workers’ lifestyle behavior by goal setting, feedback, and problem-solving strategies; visits aimed to change workers’ lifestyle behavior in both the short term (i.e., 6 months), by attending the guided group sessions of the VEP and performing weekly unsupervised vigorous physical activities, as well as after 12 months (i.e., sustainability of the newly adopted healthy lifestyle in the long term) ▪ during coach visits, 5 items are discussed: a) goal setting (i.e., losing weight; increasing aerobic fitness) and explanation of the goals of the VEP (a yoga session once a week; a workout session once a week; and aerobic exercise without direct face-to-face instruction once a week), b) getting confidence in achieving formulated goals, c) giving feedback on formulated goals, d) discussing barriers to formulated goals, e) problem solving ▪ FIRST VISIT: goal setting and confidence in achieving formulated goals are discussed ▪ SECOND THIRD VISIT: same items are discussed, namely feedback on formulated goals, discussing barriers for formulated goals, and problem solving; at all visits,

Category	Extracted data
	workers receive advice on suitable vigorous physical activities they could perform on a regular basis
	<ul style="list-style-type: none"> • <i>compliance</i>: started allocated intervention: personal vitality coach: $n = 329$ of 367; workout: $n = 234$ of 367; Yoga: $n = 259$ of 367; mean attendance at intervention: personal vitality coach: 2.7 (range = 1-3); yoga workout: 10.4 sessions per 24 weeks 11.1 sessions per 24 weeks; attendance rates (yoga: 51.7%, workout: 44.8%) lower than expected; compliance categories defined: workers in IG who did not follow a guided session (yoga $n = 47$; workout $n = 62$); low compliance: \leq mean number of sessions (yoga $n = 95$; workout $n = 89$); high compliance: $>$ mean number of sessions (yoga $n = 108$; workout $n = 99$) • <i>integrity of delivery</i>: <ul style="list-style-type: none"> ○ DOSE DELIVERED: in total 72.3% of planned yoga sessions (Amsterdam: 89.3%; Leiden: 58.3%), and 96.3% of all planned workout sessions were indeed provided (Amsterdam: 95.1%; Leiden: 97.4%); as for the provided PVC visits, both locations managed to provide all (100.0%) PVC visits ○ FIDELITY: intervention protocol with respect to the time schedules of the yoga and workout group sessions was partly followed by the providers <ul style="list-style-type: none"> ▪ Amsterdam: both the yoga and workout sessions were provided on all working days ▪ Leiden: yoga sessions provided on two working days, workout sessions were provided on four working days ▪ average size of provided yoga group sessions was 4.8 workers (range = 1-19). Except for one yoga session, in which 19 workers participated, all other sessions were provided in groups of a maximum of 16 workers. Mean number of workers per guided workout session was 3.9 (range = 1-15) ▪ no substantial differences between the two locations regarding the group sizes of the guided yoga; PVC visits: the mean number of items discussed was 4.3 ± 1.2; sig. significant ($p = 0.001$) more items discussed at location Amsterdam (4.6 ± 1.0) compared to Leiden (3.7 ± 1.3); first two items (goal setting and obtaining confidence in achieving formulated goals) were discussed in 88.8% of all first PVC visits, with no sig. differences between locations; third item, feedback on formulated goals, discussed in 78.2% of all cases (sig. higher ($p = 0.011$) in Amsterdam compared to Leiden (91.2% versus 79.2%); fourth and fifth items, discussing barriers for formulated goals and problem solving, were discussed in 64.0% and 65.1% of all cases, respectively (sig. higher at Amsterdam location: Amsterdam: 91.2% for both items, Leiden: 35.0%: $p < 0.001$ and 41.0%: $p < 0.001$) • <i>economic information</i>: free fruit provided at the guided group sessions of the VEP • <i>theoretical basis</i>: <ul style="list-style-type: none"> ○ yoga sessions: based on Hatha yoga (i.e., asana, pranayama, and relaxation exercises) ○ personal coach visits: based on psychological behavior changing theories, such as goal setting, feedback, and problem-solving strategies
	Control: active control (written information) ($n = 363$)
	<ul style="list-style-type: none"> • <i>delivery</i>: written information

Category	Extracted data
	<ul style="list-style-type: none"> • <i>description</i>: written information: see IG; information about a healthy lifestyle in general (i.e., diet, physical activity, and relaxation) • <i>compliance</i>: N = 363 of 363 allocated participants received control • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>: not specified
Outcomes	<p>Outcomes collected and reported:</p> <p><i>Primary outcome</i></p> <ul style="list-style-type: none"> • (general) vitality - RAND-36 vitality scale • work-related vitality - vitality scale of UWES <p><i>Secondary outcome</i></p> <ul style="list-style-type: none"> • work engagement - UWES • productivity - single item from WHO Health Productivity Questionnaire • sick leave - single item from Productivity and Disease Questionnaire <p><i>Other outcome</i></p> <ul style="list-style-type: none"> • physical activity, sports activities (min/week) - Short QUESTIONnaire to ASses Health-enhancing physical activity (SQUASH) • vigorous physical activity - SQUASH • moderate-vigorous physical activity - SQUASH • vigorous physical activity - accelerometer (only in subsample) • moderate-vigorous physical activity - accelerometer (only in subsample) • aerobic capacity - VO2max during UKK (UKK institute) 2km walk test (only in subsample) • weekly fruit intake - Short Fruit and Vegetable Questionnaire • mental health - RAND-36 mental health scale • need for recovery from work - Dutch Questionnaire on the Experience and Evaluation of Work <p>Time points measured: 1) pre-intervention; 2) postintervention (after 6-month intervention/6 months after baseline); 3) 6-month follow-up (6 months postintervention/12 months after baseline) (only for outcomes reported in Strijk 2013 (second reference to Strijk et al., 2011): general and work-related vitality, work engagement, productivity, sick leave)</p> <p>Adverse events: participants reported no adverse events of intervention</p>
Notes	<p>Contact with authors: We contacted the authors to get the information about the number of participants lost to follow-up at 12 months in both groups (due to different numbers in the flow chart) (Van der Beek, 2018).</p> <p>Study start/end date: April 2009 to October 2010 at 2 locations</p> <p>Funding source: Vital@Work study financially supported by the 'Foundation Institute GAK'</p> <p>Declaration of interest: no competing interests to declare</p> <p>Ethical approval needed/obtained for study: approved by the Medical Ethics Committee of the VU University Center Amsterdam (VUmc) and of the Leiden University Medical Center (LUMC)</p> <p>Comments by authors: registered at the Dutch Trial Register under trial registration number: NTR1240 (http://www.trialregister.nl/trialreg/admin/rctview.asp?TC=1240)</p> <p>Miscellaneous outcomes by the review authors: not relevant</p> <p>Correspondence: Jorien E. Strijk (je.strijk@vumc.nl); corresponding author: Prof. Allard J van der Beek; Department of Public and Occupational Health, EMGO+ Institute for Health and Care Research, VU University Medical Center; Body@Work, Research Center Physical Activity, Work and Health, TNO-VUmc, Van der Boechorststraat 7, 1081 BT Amsterdam, The Netherlands; a.vanderbeek@vumc.nl</p>

Table D6.39

Tierney 1997

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power sample size calculation, level of power achieved): power not specified but, according to authors, small sample size to achieve statistical significance</p> <p>Imputation of missing data: not specified</p>
Participants	<p>Country: USA</p> <p>Setting: suburban community hospital</p> <p>Age: see Population description; age not specified</p> <p>Sample size (randomized): 62</p> <p>Sex: not specified (unclear if male nurses also included)</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: not specified</p> <p>Population description: staff nurses employed between 6 months and 2.5 years at community hospital</p> <p>Inclusion criteria: not specified</p> <p>Exclusion criteria: not specified</p> <p>Attrition (withdrawals and exclusions): not specified</p> <p>Reasons for missing data: not specified</p>
Interventions	<p>Intervention 1: hardiness class ($n = 21$)</p> <ul style="list-style-type: none"> • <i>delivery</i>: face-to-face; group session; didactics, role play, discussion • <i>providers</i>: given by the authors with guest lecture by a nurse manager • <i>duration of treatment period and timing</i>: 1-day 6-hour class • <i>description</i> <ul style="list-style-type: none"> ○ identification of urgent stressors; Introduction of concept of hardiness: commitment, control and challenge ○ situational reconstruction (assertiveness training, stress inoculation, rational emotive techniques) ○ relaxation and visual imagery ○ situation reviews and critiques • <i>compliance</i>: not specified • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>: content based on course for nurse managers (Rich, unpublished manuscript) <p>Intervention 2: time management class ($n = 19$)</p> <ul style="list-style-type: none"> • <i>delivery</i>: face-to-face; group session • <i>providers</i>: taught by one of the authors • <i>duration of treatment period and timing</i>: 1-day 6-hour class • <i>description</i>: <ul style="list-style-type: none"> ○ issues involved in hardiness eliminated from this course ○ identification of work dilemmas involved in time management; setting priorities ○ six steps for better time management: 1) planning, 2) delegating, 3) avoiding procrastination, 4) dealing with interruptions, 5) working with others, 6) completing paper work • <i>compliance</i>: not specified • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>: using principles of Douglass et al. (1983)

Category	Extracted data
Outcomes	<p>Control: no intervention ($n = 22$)</p> <p>Outcomes collected and reported:</p> <ul style="list-style-type: none"> • hardiness - Personal Views Survey (PVS) • hardiness, commitment - PVS • hardiness, control - PVS • hardiness, challenge - PVS <p>Time points measured and reported: 1) pre-intervention; 2) postintervention; 3) 6-month follow-up (6 months postintervention)</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: no correspondence required</p> <p>Study start/end date: not specified</p> <p>Funding source: not specified</p> <p>Declaration of interest: not specified</p> <p>Ethical approval needed/obtained for study: not specified</p> <p>Comments by authors: not specified</p> <p>Miscellaneous outcomes by the review authors: time management group is no attention control but second intervention group (see results: only no intervention group is indicated as CG)</p> <p>Correspondence: Mary Jo Tierney, Nurse Practitioner, San Mateo County, San Mateo, California</p>

Table D6.40

Varker 2012

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power sample size calculation, level of power achieved): not specified</p> <p>Imputation of missing data: no imputation of missing data; available case analysis (only participants who took part in video session and for whom outcomes were obtained)</p>
Participants	<p>Country: Australia</p> <p>Setting: general community; not specified where training took place</p> <p>Age: mean = 28.4 (SD = 10.4, range = 18-63) years</p> <p>Sample size (randomized): 82</p> <p>Sex: 45 women, 35 men (in analyzed sample of $n = 80$)</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: post-traumatic stress symptoms, depression, anxiety and stress at pre-intervention (not specified)</p> <p>Population description: individuals from general population</p> <p>Inclusion criteria: not specified</p> <p>Exclusion criteria: not specified</p> <p>Attrition (withdrawals and exclusions): Originally there were 82 participants who attended the first session; however, 2 participants failed to attend the second session (video and postintervention assessment) and therefore were excluded (group not specified); 1 participant was excluded from Depression Anxiety and Stress Scale (DASS 21) analysis (not specified which group); 2 participants excluded from memory analysis (IG = 1, CG = 1)</p> <p>Reasons for missing data: not specified ($n = 2$), exclusion for DASS-21 analysis as outlier ($n = 1$); exclusions for memory analysis as failed to complete memory components at postintervention and follow-up ($n = 2$)</p>
Interventions	<p>Intervention: inoculation resilience training ($n =$ not specified)</p> <ul style="list-style-type: none"> • <i>delivery</i>: face-to-face; setting unclear • <i>providers</i>: not specified • <i>duration of treatment period and timing</i>: single 40-minute session • <i>description</i>: <ul style="list-style-type: none"> ○ focused on increasing a sense of controllability, reducing unexpectedness and used serial approximation to desensitize the person to likely stressful events ○ STAGE 1: initial introduction, STAGE 2: education about physical responses to trauma; STAGE 3: teaches applied tension techniques to aid in stopping fainting or fear of fainting; STAGE 4: teaches thought stopping techniques for inappropriate thoughts; includes identifying distorted thoughts, challenging them, and replacing them with more adaptive thoughts; STAGE 5: participants are exposed to serial approximation/desensitization using projected still images of car crashes; STAGE 6: teaches about the importance of social support; STAGE 7: education about appropriate and inappropriate drug and alcohol use • <i>compliance</i>: not specified • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>:

Category	Extracted data
	<ul style="list-style-type: none"> ○ based on current research regarding the nature and etiology of post-traumatic stress disorder (PTSD) (Foa & Kozak, 1986) and the treatment of PTSD; combines several aspects of Stress inoculation training (Cameron & Meichenbaum, 1982) with serial approximation (Foa & Kozak, 1986) and education <p>Control: attention control (non-intervention 'pragmatic' training group) (n = not specified)</p> <ul style="list-style-type: none"> • <i>delivery</i>: face-to-face; setting unclear • <i>providers</i>: not specified • <i>duration of treatment period and timing</i>: single 40-minute session • <i>description</i>: <ul style="list-style-type: none"> ○ accident management training; practical tips and strategies on what to do if they are involved in, or witness a traffic accident ○ Participants are taught about the role of the police when they are called to attend a traffic (Duties include securing the scene, checking if medical attention is required, determining what took place, breath testing, issuing a fine where necessary and submitting a report). • <i>compliance</i>: not specified • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>: not specified
Outcomes	<p>Outcomes collected and reported:</p> <ul style="list-style-type: none"> • perceived social support - Interpersonal Support Evaluation List-12 - not reported • depression - DASS 21 (only pre-intervention and follow-up) • anxiety - DASS 21 (only pre-intervention and follow-up) • stress - DASS 21 (only pre-intervention and follow-up) • post-traumatic stress symptoms, total - PTSD Symptom Scale-Self-Report (PSS-SR) (only at follow-up) • post-traumatic stress symptoms, intrusions - PSS-SR (only at follow-up) • post-traumatic stress symptoms, avoidance - PSS-SR (only at follow-up) • post-traumatic stress symptoms, arousal - PSS-SR (only at follow-up) • memory of video - questionnaire used in previous study (Devilly et al., 2007) (postintervention and follow-up) • video distress - single item (postintervention and follow-up) <p>Time points measured: 1) pre-intervention; 2) postintervention (after training in week 1 and stressor exposure in week 2); 3) 1-month follow-up (1-month postintervention)</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: We contacted the authors to get the information about the number of participants randomized to each group (before $n = 3$ exclusions), but they had not responded at the time of writing.</p> <p>Study start/end date: not specified</p> <p>Funding source: not specified</p> <p>Declaration of interest: All authors declare no conflict of interests in the preparation of this report.</p> <p>Ethical approval needed/obtained for study: not specified</p> <p>Comments by authors: not specified</p> <p>Miscellaneous outcomes by the review authors: not relevant</p> <p>Correspondence: Tracey Varker, Australian Centre for Posttraumatic Mental Health, University of Melbourne, Australia; Corresponding author: Grant J. Devilly, Griffith Health Institute School of Applied Psychology, Griffith University, Mt Gravatt Campus, Messines Ridge Road, Mt Gravatt, Qld 4122, Australia; grant@devilly.org; Tel.: +61 7 37353309; fax: +61 7 37353436</p>

Table D6.41

Villani 2013

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power sample size calculation, level of power achieved): power not specified; small sample size</p> <p>Imputation of missing data: not applicable since no dropouts or exclusions</p>
Participants	<p>Country: Italy</p> <p>Setting: oncology hospitals</p> <p>Age: mean = 43 (SD = 8.80) years</p> <p>Sample size (randomized): 30</p> <p>Sex: 30 women (oncology nurses)</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: all participants with cut-off of stress corresponding to higher quartile (Italian normative data) measured by Mesure du Stress Psychologique (MSP); received from authors (Villani, 2018): state anxiety (State Trait Anxiety Inventory, STAI): IG = 43.64 (8.03), CG = 44.00 (9.91)</p> <p>Population description: female oncology nurses with permanent status employed in 6 oncology hospitals in Milan, Italy</p> <p>Inclusion criteria: 1) being a current oncology nurse with a minimum of 5 years of experience in the oncology ward; 2) having a permanent status, to avoid sources of stress related to temporary employment; 3) having a cut-off level of stress corresponding to the higher quartile (Italian normative data), measured using the MSP Questionnaire</p> <p>Exclusion criteria: not specified</p> <p>Attrition (withdrawals and exclusions): information received from authors (Villani, 2018): no dropouts or exclusions during the study (only 8 participants excluded before randomization because they did not meet the inclusion criteria)</p> <p>Reasons for missing data: not applicable since no dropouts or exclusions</p>
Interventions	<p>Intervention: Mobile Stress Inoculation Training (M-SIT) (<i>n</i> = 15)</p> <ul style="list-style-type: none"> • <i>delivery</i>: audio-video clips with narrative via mobile phones and headphones; background music • <i>providers</i>: not specified (probably self-guided) • <i>duration of treatment period and timing</i>: 4 weeks; 8 videos (1 video per session) twice a week; each session: 15 minutes • <i>description</i>: <ul style="list-style-type: none"> ○ first 6 audio-video clips show relaxing virtual environment; last 2 video clips present oncology patients suffering from cancer ○ 8 sessions <ul style="list-style-type: none"> ▪ SESSION 1-3: CONCEPTUALIZATION PHASE: a) aim: to make nurses aware about their typical stressful reactions during their work; b) multimedia content: narrative voice guided participants in a vernal garden, a lake and a small waterfall exploration ▪ SESSIONS 4-5: SKILLS ACQUISITION REHEARSAL PHASE: a) aim: to teach coping strategies and relaxation techniques; b) multimedia content: narrative voice guides participants to explore an autumn hill, a mountain and a tree house ▪ SESSION 7-8: APPLICATION FOLLOW-THROUGH PHASE: a) aim: to assess the ability of participants to use the coping skills, acquired during the intervention; b)

Category	Extracted data
	<p>multimedia content: participants watch 2 video clips presenting oncology patients suffering from cancer, in a hospital ward</p> <ul style="list-style-type: none"> ○ skills acquisition and rehearsal phase combined with two kinds of relaxation techniques: Progressive Muscular Relaxation (PMR) and Autogenic Training (AT) • <i>compliance</i>: not specified • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>: created according to the SIT procedure (Meichenbaum, 1977); PMR (Jacobson, 1938) and AT (Schultz, 1977). PMR (Jacobson, 1938) aims to decrease the physiological aspects of anxiety by distracting individuals from their awareness of anxious feelings. AT (Schultz, 1977) explores the effectiveness of a relaxation training based on the individual's ability to control the body through mind exercises <p>Control: attention control ($n = 15$)</p> <ul style="list-style-type: none"> • <i>delivery</i>: video clips without any narratives via mobile phones; background music (same as in intervention group) • <i>providers</i>: not specified (probably self-guided) • <i>duration of treatment period and timing</i>: 4 weeks; 8 videos (1 video per session) twice a week; each session: 15 minutes • <i>description</i>: 8 video clips represented natural environments; previously validated as neutral stimuli • <i>compliance</i>: not specified • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>: Gross and Levenson (1995)
Outcomes	<p>Outcomes collected and reported:</p> <ul style="list-style-type: none"> • state anxiety - STAI • trait anxiety - STAI • coping skills, active coping - Brief Coping Orientation to Problems Experienced (Brief COPE) • coping skills, denial - Brief COPE <p>Time points measured and reported: 1) pre-intervention; 2) end of session 1 (only state anxiety); 3) end of session 2 (only state anxiety); 4) end of session 3 (only state anxiety); 5) end of session 4 (only state anxiety); 6) end of session 5 (only state anxiety); 7) end of session 6 (only state anxiety); 8) postintervention (after all 8 training sessions)</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: We contacted the authors to ask for the means and SDs for all outcomes at pre- and postintervention (after 8 sessions), the number of dropouts and the number of participants analyzed in each group (Villani, 2018).</p> <p>Study start/end date: not specified</p> <p>Funding source: not specified</p> <p>Declaration of interest: not specified</p> <p>Ethical approval needed/obtained for study: not specified</p> <p>Comments by authors: not specified</p> <p>Miscellaneous outcomes by the review authors: information on attrition and values on state anxiety received from authors (Villani, 2018).</p> <p>Correspondence: Daniela Villani, PhD, Department of Psychology, Catholic University of Sacred Heart, Milan, Italy; daniela.villani@unicatt.it</p>

Table D6.42

West 2014

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power sample size calculation, level of power achieved): Of the 37 participants in each arm of the study, 34 (91.9%) provided survey responses. With this sample size, power was 80% to detect a moderate Cohen f^2 effect size of 0.15; no sample size calculation reported</p> <p>Imputation of missing data: no imputation of missing data (information received from authors; West, 2017); per-protocol analysis (with participants who took part in allocated intervention, i.e., without 2 participants in IG who withdrew consent) and available case analysis (with participants for whom outcomes were obtained)</p>
Participants	<p>Country: USA</p> <p>Setting: Department of Medicine at the Mayo Clinic Rochester</p> <p>Age: see Population description; age not specified</p> <p>Sample size (randomized): 74</p> <p>Sex: 25 women, 49 men</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: IG had slightly higher rates of high emotional exhaustion and overall burnout (Maslach Burnout Inventory, MBI); burnout, n (%): full high depersonalization: IG = 9 (24.3%), CG = 9 (25.7%); full high emotional exhaustion: IG = 17 (45.9%), CG = 12 (34.3%); full overall burnout: IG = 20 (54.1%), CG = 15 (42.9%); depression, n (%): positive depression screen (2 question approach): IG = 11 (29.7%), CG = 11 (31.4%)</p> <p>Population description: practicing physicians in the Mayo Clinic Department of Medicine</p> <p>Inclusion criteria: not specified</p> <p>Exclusion criteria: not specified</p> <p>Attrition (withdrawals and exclusions): 2/37 (5.4%) in IG withdrew consent and therefore could not be analyzed; number who did not complete assessments (information received from authors; West, 2017): pre-intervention: $n = 7$; 3-month follow-up: $n = 5-6$ for different outcomes; 12-month follow-up: $n = 8$)</p> <p>Reasons for missing data: not specified</p>
Interventions	<p>Intervention: small-group curriculum ($n = 37$)</p> <ul style="list-style-type: none"> • <i>delivery</i>: face-to-face, group sessions (4 small groups of 8-10 physicians each) with similar compositions by sex and specialty • <i>providers</i>: <ul style="list-style-type: none"> ○ practicing internal medicine physicians with specific expertise in communication and teaching courses involving small-group facilitation ○ training: 4-hour training session specific to the study curriculum before commencement of the small-group sessions ○ supervision: 1-hour, biweekly facilitator meetings to debrief and prepare for the next session • <i>duration of treatment period and timing</i>: 19 sessions; 1-hour meetings occurring once every 2 weeks for 9 months • <i>description</i>: <ul style="list-style-type: none"> ○ topics addressed during these sessions organized into modules entitled “self,” “patient,” and “balance” and included meaning in work, personal and professional balance, medical mistakes, community, caring for patients, and other topics relevant to the work experiences of practicing physicians

Category	Extracted data
	<ul style="list-style-type: none"> ○ same structure in each session: (1) check-in and welcome, (2) preparing the environment (e.g., journaling and reflective exercise), (3) facilitated group discussion, (4) learned skills and solutions, and (5) checkout and summary ○ MODULE I: self <ul style="list-style-type: none"> ▪ 1. introduction and overview of curriculum, group development ▪ 2. physician well-being: a. preventive care: e.g., screening, physicians' physical health practices; b. assessing well-being (mainly mental side): honesty, reflective practice, mindfulness ▪ 3. physician distress: a. physical and psychological distress (illness, disability); b. the wounded healer: moral distress, burnout, fear, anger, (other emotions) ▪ 4. meaning in work: part Ia. definitions of meaning: group question – why do you work doing what you do?; b. sources of meaning: influence of personal values, identity ▪ 5. meaning in work: Part IIa. protecting meaning: meaning through the professional life cycle; b. promoting meaning: approaches may vary over time, need to be flexible ▪ 6. personal resources: a. mindfulness/resiliency (internal resources); b. spirituality/religion, community, friendships, activities (links to external resources) ▪ 7. thriving: a. definitions: the spectrum of well-being, with distress on one end, what is on the other end?; b. what is needed to flourish/thrive? ○ MODULE II: patient <ul style="list-style-type: none"> ▪ 8. patient connectedness: a. compassion in the face of personal disengagement; b. deep versus surface acting and empathy ▪ 9. barriers to care: part I (patient-based) a. the challenging patient; b. expectations from patients and families ▪ 10. barriers to care: part II (provider-based) a. physician assumptions and biases (stereotypes, prejudices); b. insight into personal cognitive patterns and how these may represent barriers to the patient-physician relationship, recognizing personal limitations ▪ 11. bad news: a. effect of suffering and death on physicians (the grieving healer); b. physician as source of hope ▪ 12. medical mistakes and errors: a. experiences of error and reactions from peers/system; b. impact on physicians ▪ 13. being present: a. definitions, relevance to practice; b. skills for being present: reflective listening, listening to self and listening to others ○ MODULE III: balance <ul style="list-style-type: none"> ▪ 14. personal/professional balance: a. work-home interference; b. balancing external pressures (societal and professional expectations) ▪ 15. personal/professional identity: a. professional and personal expectations and self; b. the role of choices (intentional or not)

Category	Extracted data
	<ul style="list-style-type: none"> ▪ 16. personal/professional relationships: a. relationships beyond work and within work (healthy and unhealthy); b. power differentials as a barrier to healthy relationships ▪ 17. gender and generational differences: a. male-female roles at work and home; b. priorities across generations, barriers to communication (e.g., mindfulness and acknowledgment of personal perspectives and biases) ▪ 18. resiliency: a. mindfulness/resiliency; b. resiliency skills training ▪ 19. closure of curriculum: a. orientation to resources, ongoing relationships; b. closure process (reflections on course) <ul style="list-style-type: none"> • <i>compliance</i>: 35 participants analyzed in the intervention arm attended a mean of 11.7 of 19 facilitated small-group sessions • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>: <ul style="list-style-type: none"> ○ Building on previous literature, this intervention involved facilitated physician discussion groups organized around a curriculum incorporating elements of mindfulness, reflection, shared experience, and small-group learning intended to promote collegiality and community at work among participants (Epstein, 1999; Krasner et al., 2009; McCue & Sachs, 1991; Rabow & McPhee, 2001; Shanafelt et al., 2003; Shapiro et al., 2005; Sood et al., 2011; Warnecke et al., 2011). <p>Control: no intervention; could schedule and use this hour of protected time in any manner they believed was most useful but did not participate in the formal curriculum ($n = 37$)</p>
Outcomes	<p>Outcomes collected and reported:</p> <ul style="list-style-type: none"> • job satisfaction - Physician Job Satisfaction Scale • perceived stress - Perceived Stress Scale • fatigue - single-item linear analog question - not reported • quality of life - single-item linear analog question • engagement, empowerment and meaning at work - Empowerment at Work Scale • overall burnout - MBI • burnout, emotional exhaustion - MBI • burnout, depersonalization - MBI • burnout, low personal accomplishment - MBI - not reported • empathy - Jefferson Scale of Physician Empathy - not reported • mental health physical well-being - Medical Outcomes Study Short-Form Health Survey 8 items - not reported • depression screen - 2 question approach <p>Outcomes reported:</p> <ul style="list-style-type: none"> • job satisfaction - PJSS • perceived stress - PSS • engagement, empowerment and meaning at work - EWS • quality of life - single-item linear analog question • overall burnout - MBI • burnout, emotional exhaustion - MBI • burnout, depersonalization - MBI • depression screen - 2question approach

Category	Extracted data
	<p>Time points measured and reported: 1) pre-intervention; 2) during intervention at 3 months (during 9-month intervention); 3) during intervention at 6 months (during 9-month intervention); 4) postintervention (at 9 months, i.e., end of 9-month intervention); 5) 3-month follow-up (3 months postintervention); 6) 12-month follow-up (12 months postintervention)</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: We contacted the authors to ask for the means and SDs for the outcomes at all time points and the procedures in dealing with missing data (West, 2017).</p> <p>Study start/end date: study conducted between September 2010 to June 2012</p> <p>Funding source: supported by the Mayo Clinic Program on Professionalism and Ethics and the Department of Medicine at Mayo Clinic Rochester; funding source had no role in the design and conduct of the study; collection, management, analysis, or interpretation of the data; preparation, review, or approval of the manuscript; and decision to submit the manuscript for publication</p> <p>Declaration of interest: no conflicts of interest reported</p> <p>Ethical approval needed/obtained for study: approved by the Mayo Clinic IRB</p> <p>Comments by authors: trial registration: clinicaltrials.gov Identifier: NCT0115997</p> <p>Miscellaneous outcomes by the review authors: not relevant</p> <p>Correspondence: Colin P. West, MD, PhD, Division of General Internal Medicine, Department of Medicine, Mayo Clinic, 200 First St, Rochester, MN 55905; west.colin@mayo.edu</p>

Table D6.43

West 2015

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power sample size calculation, level of power achieved): not specified in conference abstract</p> <p>Imputation of missing data: not specified</p>
Participants	<p>Country: USA</p> <p>Setting: academic internal medicine physicians; setting where intervention took place not specified</p> <p>Age: see Population description; age not specified</p> <p>Sample size (randomized): 125</p> <p>Sex: not specified</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: not specified</p> <p>Population description: academic internal medicine physicians</p> <p>Inclusion criteria: not specified</p> <p>Exclusion criteria: not specified</p> <p>Attrition (withdrawals and exclusions): not specified</p> <p>Reasons for missing data: not specified</p>
Interventions	<p>Intervention: COMPASS groups (COlleagues Meeting to Promote And Sustain Satisfaction) ($n = 64$)</p> <ul style="list-style-type: none"> • <i>delivery</i>: face-to-face; group sessions; meetings of self-formed groups (6-8 physicians) • <i>providers</i>: self-formed group • <i>duration of treatment period and timing</i>: 12 biweekly 1-hour meetings (6 months in total) • <i>description</i>: <ul style="list-style-type: none"> ○ each session: brief 15-minute group discussion of an assigned topic relevant to the physician experience and drawn from prior physician well-being literature ○ followed by 45 minutes for shared lunch or other group activity as determined by each group itself ○ small group topics included: work-life balance, medical mistakes, meaning in work, and resiliency, among other topics relating to the physician experience • <i>compliance</i>: not specified • <i>integrity of delivery</i>: not specified • <i>economic information</i>: \$20 per session for meal expenses • <i>theoretical basis</i>: not specified <p>Control: wait-list control ($n = 61$)</p>
Outcomes	<p>Outcomes collected and reported:</p> <ul style="list-style-type: none"> • quality of life - Linear analog self-assessment of overall quality of life • burnout - Maslach Burnout Inventory (MBI) • burnout, emotional exhaustion - MBI • burnout, depersonalization - MBI • burnout, personal accomplishment - MBI • depression - PRIME-MD (Primary Care Evaluation of Mental Disorders) depression screen • meaning from work - Empowerment at Work Scale • social isolation - Social isolation PROMIS (Patient-Reported Outcomes Measurement Information System) instrument

Category	Extracted data
	<ul style="list-style-type: none"> • job satisfaction - Physician Job Satisfaction Scale • likelihood of leaving in next 2 years - no measure specified <p>Time points measured and reported: pre-intervention and then quarterly assessments: 1) pre-intervention; 2) during intervention (after 3 months); 3) postintervention (after 6-month intervention); follow-up assessments not specified; time points reported: absolute change in outcomes from baseline to 6 months</p> <p>Adverse events: not specified in conference abstract</p>
Notes	<p>Contact with authors: We contacted the authors to get the information if the study was published in the meantime (West, 2018). In addition, we asked for the (unpublished) summary data (West, 2018).</p> <p>Study start/end date: not specified</p> <p>Funding source: not specified</p> <p>Declaration of interest: not specified</p> <p>Ethical approval needed/obtained for study: not specified</p> <p>Comments by authors: not specified</p> <p>Miscellaneous outcomes by the review authors: conference abstract; presented at 38th Annual Meeting of the Society of General Internal Medicine, Toronto, Canada, 2015; information received from authors (West, 2018): paper is currently being written, and has not yet been published; data for overall quality of life and burnout (emotional exhaustion, depersonalization) sent by the authors (West, 2018)</p> <p>Correspondence: Colin P. West, Mayo Clinic, Rochester, Minnesota; West.Colin@mayo.edu</p>

Table D6.44

Wild 2016

Category	Extracted data
Methods	<p>Study design: RCT</p> <p>Study grouping: parallel group</p> <p>Unit of randomization: individuals</p> <p>Power (power sample size calculation, level of power achieved): not specified</p> <p>Imputation of missing data: not specified</p>
Participants	<p>Country: UK</p> <p>Setting: emergency workers (police, fire and rescue, ambulance, search and rescue); setting where intervention took place not specified</p> <p>Age: mean = 41.41 (SD = 9.78) years</p> <p>Sample size (randomized): 430</p> <p>Sex: 250 women, 180 men</p> <p>Comorbidity (mean (SD) of respective measures in indicated, if available) at baseline: previous traumas (trauma screener, range = 0-21): IG = 4.498 (3.45), CG = 4.76 (3.28); post-traumatic stress disorder (PTSD) (Posttraumatic Stress Disorder Checklist-5; PCL-5; range = 0-84): IG = 8.965 (12.37), CG = 9.42 (13.75); Alcohol Use Disorders Identification Test (AUDIT; range = 0-40): IG = 5.23 (4.08), CG = 5.19 (4.25); depression (Patient Health Questionnaire; PHQ-9): IG = 3.89 (4.07), CG = 3.83 (3.85)</p> <p>Population description: employed or volunteering as front-line or office-based staff in one of the following emergency services: police, fire and rescue, ambulance, and search and rescue</p> <p>Inclusion criteria: being employed or volunteering as front-line or office-based staff in one of the following emergency services: police, fire and rescue, ambulance, and search and rescue</p> <p>Exclusion criteria: Participants who scored in the clinical range on measures of PTSD or depression, or those who expressed suicidal ideation, had a one-to-one discussion with the study's psychologist. They were included in the study if they did not evidence risk, their symptoms were not interfering with their daily functioning and they did not wish to access treatment.</p> <p>Attrition (withdrawals and exclusions): postintervention: 82 did not complete postintervention assessment (IG = 61/317 (19.2%), CG = 21/113 (18.6%)); 3-month follow-up: 48 did not complete follow-up assessment (IG = 35/317 (11%), CG = 13/113 (11.5%))</p> <p>Reasons for missing data: not specified</p>
Interventions	<p>Intervention: Mind's resilience intervention (<i>n</i> = 317)</p> <ul style="list-style-type: none"> <i>delivery</i>: face-to-face; group sessions (in total 31 resilience courses provided from May to December 2015; on average 9 participants [range = 4-16] per group) <i>providers</i>: Local Mind trainers <i>duration of treatment period and timing</i>: six 2.5-hour sessions <i>description</i>: <ul style="list-style-type: none"> improve participants' wellbeing by building social capital, encouraging positive activities, and teaching psychological coping skills drawn from cognitive-behavior therapy (CBT) and mindfulness wellbeing (BE ACTIVE: improve wellbeing through positive activities); psychological coping strategies (TAKE NOTICE: develop evidence-based psychological coping strategies drawn from CBT and mindfulness; KEEP LEARNING: learn psychological coping skills drawn from CBT and mindfulness, try new activities); social capital (GIVE: build social capital through

Category	Extracted data
	<p>joining social networks to foster a sense of belonging in neighborhoods and communities, give your time as part of a group; CONNECT: build social networks and social capital, access social support to foster belonging)</p> <ul style="list-style-type: none"> • <i>compliance</i>: IG participants completed mean number of 4.67 sessions (SD = 1.43) sessions • <i>integrity of delivery</i>: <ul style="list-style-type: none"> ○ random selection of 30 audio-recordings of group sessions from the 31 courses offered from May-December 2015 ○ double-rating for inter-rater reliability of 10% of these audio-recordings ($r = 0.985$) (excellent inter-rater reliability) ○ adherence to protocol ratings out of 100%: range 60-100, mean rating of 85.65 (13.07); good adherence of Local Mind trainers for delivering the intervention • <i>economic information</i>: not specified • <i>theoretical basis</i>: <ul style="list-style-type: none"> ○ Mind's model of resilience ○ builds on the five ways to wellbeing, a set of evidence-based public mental health messages, identified by the New Economics Foundation, aimed at improving the mental health and wellbeing of the whole population: 1. be active, 2. take notice, 3. keep learning, 4. give, 5. connect; teaching psychological coping skills drawn from CBT and mindfulness <p>Control: active control: online control intervention ($n = 113$)</p> <ul style="list-style-type: none"> • <i>delivery</i>: online; link for each topic emailed to participants once per week • <i>providers</i>: topics completed remotely by participants; content developed by Mind • <i>duration of treatment period and timing</i>: 6 weeks (6 topics) • <i>description</i>: already available information on mental health developed by Mind and, where possible, tailored for emergency personnel; 6 topics: sleep, stress, depression, anger, mindfulness, and PTSD • <i>compliance</i>: CG participants completed mean number of 5.21 (1.38) topics; completed sig. more topics than sessions completed by the IG $F(1,380) = 10.63, p = 0.001$ • <i>integrity of delivery</i>: not specified • <i>economic information</i>: not specified • <i>theoretical basis</i>: not specified
Outcomes	<p>Outcomes collected and reported:</p> <ul style="list-style-type: none"> • resilience - Connor-Davidson Resilience Scale • wellbeing - Warwick Edinburgh Mental Wellbeing scale • self-efficacy - Schwarzer-Jerusalem General Self-Efficacy Scale • ability to problem-solve and achieve goals - unpublished questionnaire • social participation (home) - 13 items • social support - 13 items • social support (home) - 6 of 13 items • social support (work) - 7 of 13 items • confidence in managing mental health and resilience - unpublished questionnaire • attributions of negative events - Attributions Questionnaire • coping behavior, self-distraction - Coping Behavior Questionnaire (Brief COPE) • coping behavior, active coping - Brief COPE • coping behavior, acceptance - Brief COPE • coping behavior, denial - Brief COPE • coping behavior, substance use - Brief COPE

Category	Extracted data
	<ul style="list-style-type: none"> • coping behavior, emotional support - Brief COPE • coping behavior, behavioral disengagement - Brief COPE • coping behavior, self-blame - Brief COPE • coping behavior, wishful thinking - Brief COPE • rumination - Ruminative Responses Scale • maladaptive responses to intrusive memories (suppression, rumination, and numbing) - Responses to Intrusions Questionnaire • exposure to trauma - trauma screener • post-traumatic stress symptoms - PCL • anxiety - GAD-7 • alcohol use - AUDIT • depression - PHQ-9 • days off work - unpublished questionnaire (only pre-intervention and follow-up) <p>Time points measured and reported: 1) pre-intervention; 2) postintervention; 3) 3-month follow-up (3 months postintervention)</p> <p>Adverse events: not specified</p>
Notes	<p>Contact with authors: We contacted the authors to ask for the subgroup (summary outcome data) for ambulance personnel and the number of participants analyzed, but they had not responded at the time of writing.</p> <p>Study start/end date: total study duration: May 2015 to March 2016 (see trial registry); March to November 2015: work with Local Minds to invite participants to take part in the study</p> <p>Funding source: sponsor: University of Oxford (UK), University Offices; funding: Mind, the mental health charity (UK) (see trial registration)</p> <p>Declaration of interest: not specified</p> <p>Ethical approval needed/obtained for study: ethical approval by Medical Sciences Division Research Ethics Committee at the University of Oxford</p> <p>Miscellaneous outcomes by the review authors: trial registration: ISRCTN79407277</p> <p>Correspondence: Dr. Jennifer Wild, Department of Experimental Psychology, University of Oxford, South Parks Road, Oxford, OX1 3UD, United Kingdom; jennifer.wild@psy.ox.ac.uk; Telephone: +44 (0)1865 618 612</p>

Note (for Tables D6.1 to D6.44): α = alpha (significance level); ACG = Authentic Connections Group; ACT = Acceptance and Commitment Therapy; AIT = Attention and Interpretation Therapy; AMS = Auxiliary Medical Service; ANCOVA = analysis of covariance; ANOVA = analysis of variance; β = beta (statistical power); AT = autogenic training; AUDIT = Alcohol Use Disorder Identification Scale; BDI = Beck Depression Inventory; BP = blood pressure; BRCS = Brief Resilience Coping Scale = Brief COPE = Coping Orientation to Problems Experience; BSI = Brief Symptom Index; CB = controlled breathing; CBI = Copenhagen Burnout Inventory; CBT = cognitive behavioral therapy; CD = compact disc; CD-RISC = Connor-Davidson Resilience Scale; CERQ = Cognitive Emotional Regulation Questionnaire; CES-D = Centers for Epidemiology Studies - Depression Scale; DVD = digital versatile disc; CG = control group; CMS = Coping Mechanism Scale; COPSOQ = Copenhagen Psychosocial Questionnaire; CP = civilian population; CPQ = Copenhagen Psychosocial Questionnaire; d = delta (Cohen's d , effect size); DASS = Depression Anxiety Stress Scale; DBP = diastolic blood pressure; ED = Emergency Department; EDDS = Eating Disorder Diagnostic Scale; e.g. = for example; EMA = Ecological Momentary Assessment; ERS = Effort-Reward Scale; ERSQ-27 = Emotional Regulation Skills Questionnaire; EWS = Empowerment at Work Scale; f or f^2 = Cohen's f or f^2 (effect size); FFMQ = Five-facet mindfulness Questionnaire; fMRI = functional Magnetic Resonance Imaging; GAD-7 = Generalized Anxiety Disorder, 7-item scale; GHQ = General Hospital Questionnaire; ICC = inter-class correlation coefficient; IES-R = Impact of Event Scale - Revised; ICU = intensive care unit; IG = intervention group; IRB = Institutional Review Board; ISEL = Interpersonal Support Evaluation List; ISI = Insomnia Severity Index; MAAS = Mindful Attention and Awareness Scale; MAACL-R = Multiple Affect Adjective Checklist - Revised; MANOVA = multivariate analysis of variance; MASL = Maslach Burnout Inventory; MBCT = Mindfulness-based Cognitive Therapy; MBI = Maslach Burnout Inventory; MBI = mindfulness-based intervention; MBI-GS = MBI-General Survey; MBI-HSS = Maslach Burnout Inventory - Human Services Survey; MBRT = Mindfulness-based Resilience Training; MBSR = Mindfulness-based Stress Reduction; MHCP = Mental Health Care Providers; MSICU = Medical-Surgical Intensive Care Unit; n = sample size (e.g., in respective study group); n^2 = η^2 (effect size); NICU = neonatal intensive care unit; NIH-EXAMINER = National Institutes of Health Executive Abilities; NP = nurse practitioner; NSS = Nursing Stress Scale; OLBI = Oldenburg Burnout Inventory; PA = physician assistant; PAA = Personal Assertion Analysis; PANAS = Positive and Negative Affect Schedule; PCL = PTSD Checklist; PCT = Psychosocial Competency Training; PFA =

Psychological First Aid; PHQ = Patient Health Questionnaire; PJSS = Physician Job Satisfaction Scale; PMR = progressive muscle relaxation; PQ = Presence Questionnaire; PRIME-MD = Primary Care Evaluation of Mental Disorders; ProQoL = Professional Quality of Life; PSI = Parenting Stress Inventory; PSI = Physical Symptom Inventory; PSQ = Perceived Stress Questionnaire; PSQI = Pittsburgh Sleep Quality Index; PSS = Perceived Stress Scale; PSS-SR = PTSD Symptom Scale - Self-Report; PTSD = Post-traumatic Stress Disorder; PVS = Personal Views Survey; QRI = Quality Relationship Inventory; RCT = randomized controlled trial; RIQ = Responses to Intrusions Questionnaire; RPMG = Relational Psychotherapy Mothers Group; RRS = Ruminative Response Scale; SAQ = Safety Attitudes Questionnaire; SAS = Smith Anxiety Scale; SBP = systolic blood pressure; SD = standard deviation; SICU = Surgical Intensive Care Unit; SMART = Stress Management and Resilience Training; STAI = State Trait Anxiety Inventory; STSS = Secondary Trauma Stress Scale; SWOP-K9 = Self-efficacy Optimism and Pessimism; TAU = treatment as usual; TNICU = Trauma and Neurosurgery Intensive Care Unit; UWES = Utrecht Work Engagement Scale; VA = Veterans Affairs; VR-SIT = Virtual Reality - Stress Inoculation Training; WEMWS = Warwick-Edinburgh Mental Well-being Scale; WES = Work Engagement Scale; WFCS = Work-Family Conflict Scale; WSBMS = Work Stress and Burnout Management Scale.

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