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Effectiveness of compassion-based interventions at work: a systematic literature review and meta-analysis considering process evaluation and training transfer

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Abstract

The aim of this study sought to systematically review and meta-analyze the effects of compassion-based interventions in the workplace. This study examines the mechanisms of the evaluation process and the elements that promote training transfer and its effects on well-being. Through rigorous systematic review methods, a total of nine studies that met the inclusion criteria were analyzed. The results of the *random effect model* indicate a standardized mean difference of -.24, 95% CI [-.62, .14], suggesting a non-significant decrease in stress levels between pre- and post-compassion training. Similarly, the *standardized mean difference* of -.096, 95% CI [-.50, .31] suggests a non-significant decrease in depression levels between pre- and post-compassion training. These findings indicate that there were no significant differences in the effects of the interventions. Even more, six studies met the key components of the process evaluation and none measured training transfer. According to these results, we proposed in the current study a "Framework for Evaluating the Effectiveness of Compassion-based Interventions in the Workplace," which offers guidelines for quality designing, implementing, and evaluating compassion-based interventions in the workplace, considering four key components: Structural Elements, Process Evaluation, Training Transfer and Well-being Outcomes. This study highlights the importance of improving the methodology of studies, conducting larger-scale trials, and focusing on the key components of compassion-based interventions. Additionally, exploring training transfer and its impact on well-being is suggested. These findings provide a foundation for future research in the field of compassion-based interventions in the workplace.

Keywords Compassion · Compassion-based interventions in the workplace · Process evaluation · Training transfer · Well-being

Introduction

In recent years, mental health has become increasingly important, especially in the Volatility, Uncertainty, Complexity, and Ambiguity (VUCA) environment, which negatively affects employees' well-being (Fonte & Pimentão, 2022). The COVID-19 pandemic has exacerbated VUCA levels, leading organizations to mitigate its impact on employees and organizational outcomes (Worley & Jules, 2020). For example, previous research has shown that during the pandemic, employees' mental health and well-being have deteriorated (Holmes et al., 2020). Employees felt isolated, with a lack of social support climate and high levels of mental, emotional, and quantitative overload (Lades et al., 2020).

Compassion could serve as a resource to alleviate these negative effects and improve the levels of social support climate, personal resources (as resilience) and communication (San Román-Niaves et al., 2022; Vidman & Strömberg, 2020). Regardless of the potential benefits of compassion, there is still limited knowledge regarding the effectiveness of compassion training in the workplace and the conditions and mechanisms required for such training to be effective. This study presents a systematic review and a meta-analysis with the aim of examining the main elements that explain

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the effectiveness of compassion-based interventions in the workplace. One notable advancement in this review is the exploration of process evaluation and training transfer mechanisms, crucial for the success of these interventions. This approach aligns with the methodology emphasized by Bridges et al. (2017), highlighting the significance of comprehensive process evaluation in intervention studies. Furthermore, it resonates with the findings of Sinclair et al. (2021), who underscored the importance of effective training transfer in maximizing the outcomes of compassion-based interventions in the healthcare context.

Compassion, characterized by its sensitivity to suffering and a strong commitment to alleviating and preventing it (Gilbert & Choden, 2013), holds significant importance. It entails recognizing the interconnectedness and interdependence of all beings and responding with kindness and empathy (Pommier et al., 2020). Research has linked compassion to positive effects on mental and physical health, as well as social relationships (Gilbert, 2020; Neff & Germer, 2013). For example, Jazaieri et al. (2014) found that compassion can increase positive emotions, social connectedness, and mindfulness, as well as decreased feelings of isolation and depression.

Furthermore, organizations can be sites of suffering (i.e., stress, high workload, poor relationship with colleagues), but can also be a source of care and compassion (Frost et al., 2000). Recognizing the significance of compassion in organizational research is crucial, as it often goes unnoticed and undervalued in workplace settings. Research has demonstrated that high levels of compassion may bring benefits to organizations, such as renewing resources, including trust and quality of personal relationships, strengthening shared values, such as respect and a focus on the common good, and increasing workplace productivity (Dutton et al., 2014; Worline et al., 2017). Compassion also leads to the development of relational skills and contributes to increased well-being, including more engagement and less burnout. Moreover, compassion can improve job performance and organizational citizenship behavior (SungHoon, 2018). All these arguments underscore the importance of promoting compassion-based interventions in the workplace.

Research on compassion-based interventions in the workplace has shown the potential to improve employee well-being, with studies demonstrating their effectiveness in reducing stress and burnout, increasing job satisfaction and engagement, and improving interpersonal relationships (Orellana-Rios et al., 2017; Scarlet et al., 2017; Sinclair et al., 2021). However, to fully leverage the potential of these interventions, it is crucial to explore their effectiveness, specifically in the workplace. There are different elements that may influence the effectiveness of interventions, such as elements related to intervention design (e.g., number of sessions, content, facilitators) and training transfer (Nielsen et al., 2023a).

Despite the significance placed on evaluating the effectiveness of compassion-based interventions in the workplace, a substantial body of research underscores the difficulties connected with training transfer. Training transfer refers to the extent to which learning that was acquired during a training program (i.e., compassion-based intervention) is effectively and successfully transferred to the workplace and maintained over time (Baldwin & Ford, 1988). Without effective training transfer, the benefits of training are unlikely to be achieved if employees fail to transfer what they have learned to their work environment (Blume et al., 2010). Therefore, it is essential to measure training transfer to evaluate its impact on the effectiveness of compassion-based interventions in the workplace. By doing so, it will be possible to identify the factors that facilitate or hinder the transfer process and enhance the overall effectiveness of these interventions in the workplace. The present research will specifically focus on examining training transfer, considering its potentially crucial role in determining the effectiveness of the interventions.

Regardless of the growing body of research on compassion-based interventions in the workplace, there remains a gap in the literature regarding interventions related to mental health at work. Nielsen and Shepherd (2022) criticize workplace mental health interventions targeting individuals for failing to explore what participants have learned and transferred during the training. This may suggest that such interventions may not be as effective as they have the potential to be, and further research is needed to better understand how to design and evaluate interventions to optimize their effectiveness and ensure the successful transfer to daily work (Baldwin & Ford, 1988).

For this reason, this study aims to shed light on the effectiveness of compassion-based interventions in the workplace directed to improve employee well-being. Based on the process evaluation framework proposed by Linnan and Steckler (2002), we delve into critical mechanisms such as context, reach, fidelity, and implementation. These mechanisms are key contributors to successful training transfer and can aid in identifying potential barriers. Specifically, we conducted a thorough review of quantitative studies on compassion-based interventions in the workplace to assess their overall effectiveness.

Therefore, this research presents four contributions. First, we contribute to the literature on compassion-based interventions at work by synthesizing and estimating the overall effect size regarding their effectiveness in improving employee well-being. Second, we contribute to a better understanding of the underlying mechanisms that influence the efficacy of compassion-based interventions in the workplace. Third, through examining these mechanisms, we contribute to compassion-based research by proposing a conceptual framework for assessing the effectiveness of

these interventions in the workplace. Fourth, we contribute to practitioners by providing clear guidelines on the elements to consider when implementing compassion-based interventions at work.

Compassion-based interventions

Compassion-based interventions refer to a range of practices aimed at cultivating and enhancing compassion within individuals (Kirby et al., 2017). These interventions aim to enhance compassion both directly, by emphasizing activities or teachings that promote understanding, awareness, and compassion expression, and indirectly, by forming environments or situations that support and naturally bring out compassion, even if it's not the main goal of the activity (Ash et al., 2021), and emphasize the development of empathic understanding, kindness, and supportive behaviors towards oneself and others (Kirby et al., 2017).

Based on Kirby et al. (2017), there are different types of compassion-based interventions that specifically target the development of compassion. These interventions include Compassion Focused Therapy (CFT; Gilbert, 2014), Mindful Self-Compassion (MSC; Neff & Germer, 2013), Compassion Cultivating Training (CCT; Jazaieri et al., 2013), Cognitively Based Compassion Training (CBCT; Pace et al., 2009), Cultivating Emotional Balance (CEB; Kemeny et al., 2012), Attachment-based Compassion Therapy (ABCT; García-Campayo et al., 2016), Compassionate Mind Training (CMT; Gilbert, 2014, 2020), Cognitively Based Compassion Training (CBCT; Negi, 2013), Compassion-Centered Spiritual Health (CCSH; Negi, 2013), and Loving-Kindness Meditation (LKM) and Compassion Meditations (e.g., Wallmark et al., 2013). They can be delivered through various modalities, including face-to-face and online settings (Stoll et al., 2020), and be implemented at the individual and group levels (de Krijger et al., 2023).

Compassion-based interventions have been demonstrated to have a wide range of positive effects, including the facilitation of prosocial behaviors in both clinical and non-clinical populations (Kirby & Gilbert, 2017). These interventions have also been associated with improvement in social relationships (Weng et al., 2013), the cultivation of compassion towards oneself and others (Gilbert, 2010; Leaviss & Uttley, 2015; Neff & Germer, 2013), and significant benefits for mental health and well-being, including improving mental health outcomes, personal and social well-being, enhance resilience, and reducing stress (Allen & Leary, 2010; Weng et al., 2018).

Even though compassion interventions have overall shown positive results, there are not many studies testing them in work contexts. For example, (Marconi et al., 2019) have demonstrated that a compassion-based intervention in the workplace can reduce burnout in healthcare professionals. Additionally, Nebot-Gresa et al. (2021) validated the brief intervention in ABCT in employees and students, and the results showed that participants reported improved compassion, transcendence beliefs and endo-group solidarity.

On the other hand, the meta-analysis conducted by Kirby et al. (2017) focused on compassion-based interventions in the general population and found moderate and significant effects in reducing suffering-related outcomes such as depression, anxiety, and psychological distress, as well as in enhancing overall well-being. This broad evidence base is particularly intriguing as it prompts further investigation into whether similar compassion-based interventions if tailored for and applied in the workplace, might yield even more pronounced effects on employee well-being.

As mentioned, these trainings could equip employees better to work in organizations in different contexts, particularly in VUCA environments. However, to do so, these trainings must be effective in producing their intended effects. Studying the effectiveness of workplace-based mental health interventions involves considering various factors, and one crucial aspect is understanding the evaluation process (Nielsen & Shepherd, 2022). Therefore, it is essential to examine how the evaluation has been conducted, ensuring that the knowledge gained from the evaluation has been effectively transferred and applied to employees' daily work.

As mentioned, previous studies on compassion-based interventions in the workplace have shown different results in their effectiveness in improving employees' well-being and mental health (Andersson et al., 2022; Nebot-Gresa et al., 2021). To date, there has been no comprehensive synthesis of these findings. For this reason, there is a need to conduct a systematic literature review using meta-analytic strategies to provide a rigorous and quantitative approach combining data from multiple independent studies, enhancing statistical power, and identifying consistent patterns across different compassion-based interventions. These suggest one important question:

Research question 1: Are compassion-based interventions in the workplace effective in increasing employees' mental health and well-being?

Process evaluation and training transfer

Intervention design plays a crucial role in explaining the results of an intervention, for instance, in terms of enhancing employee well-being and organizational outcomes. Two key elements contribute to the effectiveness of interventions: what happens during the training and what happens after (Nielsen & Shepherd, 2022). During training, attention must be given to the design of the training program itself, ensuring it is tailored to the specific needs and objectives of participants and

the organization (Baldwin & Ford, 1988). For this reason, process evaluation is a crucial component of program evaluation that focuses on assessing the implementation and delivery of interventions. Specifically, process evaluation provides valuable insights into the mechanisms, the activities, and contextual factors influencing training outcomes.

The model proposed by Linnan and Steckler (2002) suggests that process evaluation involves seven key components: context, reach, dose delivered, dose received, fidelity, implementation, and recruitment. Context refers to the broader social, cultural, and organizational factors that shape the program's implementation. Reach examines the extent to which the target population is reached and represents the diversity and representativeness of participants. Dose delivered refers to the amount and intensity of the intervention that is delivered to the participants. Dose received focuses on understanding how participants engage with and actively participate in the intervention. Fidelity is the extent to which the program is implemented as intended and involves assessing the degree to which the program adheres to its original design. Implementation encompasses the overall quality and delivery of the program. And finally, the recruitment assesses the strategies used to engage and enroll participants in the program.

Process evaluation is essential for compassion-based interventions in the workplace as it may provide insights into how these interventions are implemented, levels of participation, and the contextual factors that influence their effectiveness. This evaluative process is pivotal for refining and optimizing interventions, ensuring their relevance, feasibility, and the sustainability of the effects. Despite its significance, there exists a notable gap in research, so these can indicate another critical question:

Research question 2: Do compassion-based interventions in the workplace endeavor to identify the process evaluation mechanisms?

Besides these process evaluation mechanisms, training transfer can be another essential aspect to assess when understanding intervention effectiveness. Baldwin and Ford (1988) proposed a widely recognized model that outlines key factors influencing training transfer. Training transfer refers to the extent to which employees apply the knowledge, skills, and attitudes (KSAs) learned in training to their job performance and maintain these changes over time, thus playing a crucial role in the success of the interventions. According to their model, transfer is influenced by trainee characteristics, training design, work environment, and transfer climate. Trainee characteristics include individual factors such as motivation, self-efficacy, and cognitive ability, which influence the likelihood of transfer. The training design component emphasizes the importance of instructional methods, feedback, and practice opportunities to enhance transfer. The work environment encompasses organizational

support, supervisor encouragement, and resources available to support the transfer process. Lastly, the transfer climate refers to the norms and expectations within the organization regarding the application of learned skills. By considering these factors, organizations can promote and enhance training transfer, ensuring that newly acquired knowledge and skills are effectively applied in real-world settings.

Despite the relevance of the process evaluation and an assessment of training transfer to understand the success (or failure) of interventions (Gemmano et al., 2022; Nielsen et al., 2023b; Tafvelin et al., 2021), to our knowledge, there are no reviews that analyze the role of training transfer on compassion-based interventions at work. Furthermore, we consider that understanding the challenges associated with training transfer can be particularly relevant in the context of compassion-based interventions in the workplace. This is because applying compassionate techniques and skills learned during the intervention within real-life situations is essential for promoting lasting positive effects on individuals' well-being and fostering a compassionate work environment.

Research question 3: How effectively do compassion-based interventions in the workplace identify and incorporate training transfer elements to enhance the overall impact of these interventions?

To address the three research questions, the aim of this study is to conduct a systematic review and meta-analysis to evaluate the empirical literature regarding compassion-based interventions at work. Specifically, we will examine the mechanisms of the evaluation process and those elements that promote training transfer and its effects on employee well-being. This will allow us to comprehensively understand the effectiveness and impact of compassion-based interventions in the workplace.

Method

Following the principles of PRISMA-P (Shamseer et al., 2015), a systematic literature review and meta-analysis were conducted. These will provide an objective and robust analysis of the existing literature on compassion-based interventions in the workplace, contributing to the overall understanding of their effectiveness in promoting employee well-being.

Search strategy

From December 2022 to February 2023, a comprehensive and systematic literature search was conducted in relevant databases, following the Cochrane Collaboration's guidelines for systematic reviews. The Cochrane Collaboration provides guidance on conducting a systematic review, emphasizing the

importance of a thorough, objective, and reproducible search of a range of sources to identify eligible studies. Published studies were identified through searching in scientific databases such as Web of Science, Scopus, PsycInfo, and Pubmed. The search terms were looked at on titles, abstracts, and keywords, using the Boolean operators' combination ("OR", "AND"). The key terms used for this search in the mentioned databases were "compassion" / AND "intervention" OR "training" OR "program*" / AND "work" OR "workplace". Last search was run in February 2023.

Eligibility criteria

Each study was required to meet the following inclusion criteria to be incorporated in the meta-analyses: (1) Articles published in English, Spanish, Italian or Portuguese language. This criterion was selected because those are the main languages the research team speaks; (2) Quantitative studies published in peer-reviewed scientific journals, book chapters, and doctoral thesis. This criterion was established to ensure the quality of the information and because meta-analyses are conducted based on quantitative data; (3) Implemented compassion-based interventions as per the definition provided; (4) detailed an intervention implemented with employees of an organization, as our interest lies in the working population; (5) include measures related to well-being outcomes of compassion (e.g., engagement, burnout, stress, anxiety). This criterion was selected to adjust our data to different ways to conceptualize and measure well-being (Kirby et al., 2017). By including articles using these criteria, we excluded from the systematic review and meta-analysis: (1) Theoretical review and qualitative articles. As these articles do not include quantitative data; (2) Interventions based on self-compassion, compassion fatigue and compassion satisfaction. This distinction was made due to the recognition that self-compassion can differ from compassion towards others (López et al., 2018), and compassion fatigue and compassion satisfaction are considered as outcomes; (3) any studies conducted outside the workplace or involving the general population, as our focus is on compassion-based interventions at work; (4) Studies that do not report a well-being outcome, as this is the main outcome variable of our analysis.

Data extraction

The initial search in the databases was of 3,982 articles. A spreadsheet was used to collect the titles, abstracts and references of the articles screened in the first step. After removing 1,376 duplicates, 2,606 articles remained for further screening. First, studies were screened by the first and second authors based on title/abstract, resulting in 57 articles that met the inclusion criteria. Second, the first and second authors examined the full-text articles to determine if the studies met the inclusion criteria, and a further study was identified through manual searches, leaving a final total of 9. This is because, although many studies claim to focus on compassion (e.g., in the title or abstract), they actually utilize the constructs of self-compassion or mindfulness. The first and second authors discussed and resolved any uncertainties about eligibility for inclusion. Most of the excluded studies were not intervention studies or mindfulness, self-compassion or compassion fatigue intervention studies (Fig. 1).

Coding of the studies

Characteristics of the studies were double-coded by the first and second authors, according to a specially developed coding guide (see Table 1). Any inconsistencies were resolved by discussion. Demographic information obtained included participant numbers, occupation, age, gender and job tenure time. Studies characteristics included the author details, year, type of document (e.g., peer-reviewed articles, book chapter, thesis), number of studies reported, the country in which the intervention was implemented, whether the organization was public or private, single, or multiple sample (single if the intervention was conducted in one organization or multiple if the intervention was conducted in two or more organizations). Further information included the design of the studies (experimental), whether the intervention groups were experimental, control or waiting list, outcomes related to compassion (e.g., anxiety, depression, satisfaction) and measures of the outcomes (scales and subscales).

The level of agreement between the two coders was evaluated using *Cohen's Kappa* (Cohen, 1960). This measurement indicates the amount of agreement between the two coders above what would be expected by chance. The values of *Cohen's Kappa* range from -1.00 to +1.00, with 0 indicating chance agreement, +1.00 indicating perfect agreement, and -1.00 indicating perfect disagreement. When the values are between 0.40 and 0.59, it suggests fair agreement, between 0.60 and 0.74, it suggests good agreement, and above 0.75, it suggests excellent agreement. Except for one agreement rate, which was 0.44, all agreement rates were above 0.60. Many of them were above 0.75, approaching 100% agreement. Whenever necessary, all disagreements were resolved by discussing and consulting between the first and second author. Following this process, the consensus rates reached 100% for every piece of data extracted.

Meta-analytic procedure

The meta-analysis was implemented using R package Metafor (v2.4–0; Viechtbauer, 2010). The focus of the analysis was on changes in participants' well-being pre-post interventions.

Fig. 1 Flow diagram of selected studies
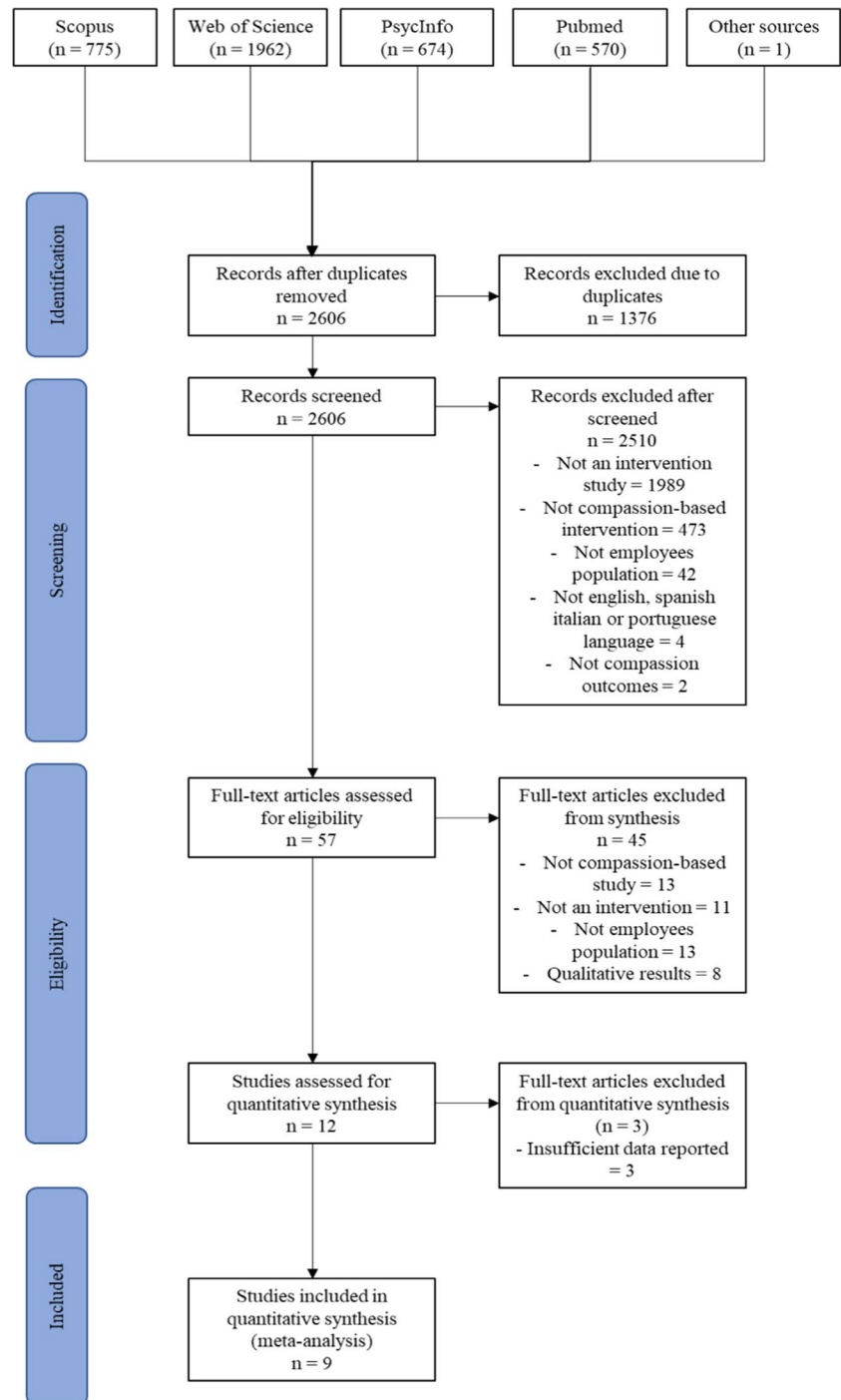
We calculated effect sizes on measures of distress (i.e., burnout, stress, anxiety; Andersson et al., 2022; Johansson et al., 2022; Mascaro et al., 2021; Watts et al., 2021) and depression (The hospital anxiety and depression scale, Zigmond & Snaith, 1983; Depression Anxiety and Stress Scales, Lovibond & Lovibond, 1995). As only two articles of the final pool from our review included between-group comparisons using a control-group research design, it was not possible to use these values to conduct the meta-analysis. Therefore, we

carry out the meta-analysis with studies including only within-group comparisons (pre-post training). We calculated *Cohen d's effect size* and its 95% confidence interval (Cohen, 1968). According to Cohen (1988), *d* values may be interpreted as small (0.2), moderate (0.5), and large (0.8).

Regarding pre–post training group comparisons, computation of the *standardized mean difference (SMD)* involves including the correlation between the time 1 (Pre) and the time 2 (Post) values (Lipsey & Wilson, 2001). As these

Table 1 Study characteristics of studies included in quantitative synthesis

Authors and year	Sample	Country	Study aim	Compassion-based intervention	Duration (weeks)	Control group	Process evaluation	Example process evaluation	Feasibility and acceptability	Training transfer	Outcomes
Andersson et al., 2022	49 employees (95% women, aged 22–55 years) of two companies	Sweden	Investigate the effects of a 6-week psychological intervention utilizing compassion training on stress, mental health, and self-compassion	CFT; MSC	6 weeks	Active Control Group	Context; Reach; Dose Delivered; Dose Received; Implementation (75%); Recruitment	Dose Delivered: All the intervention: in-person 6-week group format, with weekly 2-h group sessions	No	No	Perceived Stress; anxiety; Depression; Satisfaction with Life
Johansson et al. 2022	18 HCPs (Nurses, psychologists, psychotherapists, counsellors, occupational therapists, and doctors)	Sweden	Evaluate the feasibility of two internet-based stress management courses and their preliminary effectiveness to reduce HCPs' stress of conscience and work-related stress	CMT	5 weeks	No	Dose Delivered; Dose Received: Implementation (50%); Recruitment	Dose Received: All intervention: 5-module ICOP (text messages, video clips, and sound recordings, with reflective questions and exercises)	No	No	Burnout; Stress; Burnout Symptoms; Sleep Problems
Mascaro et al. 2021	45 CRCs (84.4% female)	United States	Develop a compassion-centered, team-based intervention, CCSH-TI to reduce burnout and promote resilience among CRCs	CCSH; CBCT	8 weeks	Wait-List Group	Context; Dose Delivered; Dose Received; Fidelity; Implementation (75%); Recruitment	Fidelity: Based on CCSH	Questionnaires to capture participants credibility, and satisfaction	Questionnaire: Perceived program benefits related to well-being	Burnout; Stress; Anxiety; Depression

Table 1 (continued)

Authors and year	Sample		Country	Study aim	Compassion-based intervention	Duration (weeks)	Control group	Process evaluation	Example process evaluation	Feasibility and acceptability	Training transfer	Outcomes
Matos et al., 2022	31 public school teachers (74.2% female, mean age of 51.33, SD = 5.27, age rang- ing 40 and 62 years old)		Portugal	Test the feasibility of the CMT-T, as well as to prelimi- nary explore possible mechanisms of change	CMT	6 weeks	No	Context; Reach; Dose Deliv- ered; Dose Received; Fidelity; Imple- mentation (100%); Recruit- ment	Context: 1 Public School	Accept- ability, imple- menta- tion, practical- ity, adap- tation, integra- tion, and pre- liminary effective- ness	Overall program assess- ment, attrition, attend- ance, and home practice	Burnout; Depression; Stress; Well- being; Satis- faction with Professional Life; Self- compassion; Compassion to Other's Motivation and Action; Compassion for the Self; Compassion from Others; Compassion for Others; Self-criti- cism; Fears of Compassion
Orellana-Ríos et al. 2017	28 staff mem- bers of a mul- tidisciplinary palliative care team (mean age 46.4 SD = 5.8; 75% female)		Germany	Test a mind- fulness and compassion- oriented medi- tation training for interdisci- plinary teams aimed to reduce dis- tress, foster resilience, and strengthen a prosocial motivation in the clinical encounter	LKM	10 weeks	No	Context; Reach; Dose Deliv- ered; Dose Received; Imple- mentation (75%); Recruit- ment	Recruit- ment: Par- ticipants were recruited by internal advertise- ments. Staff members in all work areas were invited to partici- pate	Satisfaction with the program	Semi- structured interviews: integration into daily work life, motiva- tion to participate, work related resources and distressing aspects interplay between compas- sion and personal wellbeing	Burnout; Stress; Anxiety; Depression; Emotion Regulation; Work situ- ation; Goal Attainment

Table 1 (continued)

Authors and year	Sample	Country	Study aim	Compassion-based intervention	Duration (weeks)	Control group	Process evaluation	Example process evaluation	Feasibility and acceptability	Training transfer	Outcomes
Santos et al., 2022	85 caregivers from 11 Portuguese RCH (mean age 44.47, SD = 10.7; 89.4% female)	Portugal	Examine the impact of the CMT-Care Homes Program on RYC staff to enhance an affiliative/caregiving mentality in self-to-self and interpersonal interactions, fostering a safe and secure residential care environment	MSC; CMT	12 weeks	Yes	Context; Reach; Dose Delivered; Dose Received; Fidelity; Implementation (100%)	Fidelity: The CMT-Care homes program was delivered in accordance with the handbook, in face-to-face format, weekly (2.5-h session) in each RCH	No	Compassionate formal/informal practice to be trained between sessions	Compassion; Self-compassion; Fears of Compassion: Emotional Climate in Organizations; Social Safeness and Pleasure
Scarlet et al., 2017	62 HCPs (80% female, age ranging 22–80 years)	United States	Investigate the effects of the CCT on various aspects of burnout and job satisfaction in HCPs	CCT	8 weeks	No	Reach; Dose Delivered; Dose Received; Fidelity; Implementation (100%); Recruitment	Implementation: 100% that includes Reach, Dose Delivered, Dose Received and Fidelity	No	Participants were encouraged to undertake daily formal and informal meditation practices outside of class time	Self-compassion; Mindfulness; Burnout; Job Satisfaction; Interpersonal Conflict; Fears of Compassion
Vuorinen et al., 2021	95 early childhood education teachers (98.9% females)	Finland	Promote compassion, character strengths and a supportive organization culture in ECEC	N/A	8 weeks	Yes	Reach; Dose Delivered; Dose Received; Implementation (75%); Recruitment	Recruitment: The educational authorities recruited the head teachers via an e-mail list and organized the schedule and the venue	No	After the implementation, feedback was provided by the coaching specialist and the colleagues	Compassion; Character Strengths; Strengths Use; Supportive Organization Climate; Work and Meaning

Table 1 (continued)

Authors and year	Sample	Country	Study aim	Compassion-based intervention	Duration (weeks)	Control group	Process evaluation	Example process evaluation	Feasibility and acceptability	Training transfer	Outcomes
Watts et al., 2021	31 HCPs (96.7% female, mean age 42.3 years)	Australia	Evaluate the feasibility and acceptability of a novel 6-week mindfulness-based compassion training intervention	CCT; MSC	6 weeks	No	Reach; Dose Delivered; Dose Received; Fidelity; Implementation (100%); Recruitment	Dose Delivered: All intervention: 6-week (7 h in total)	Attendance and practice. Satisfaction	No	Stress; Anxiety; Depression; Compassion Satisfaction: Secondary Traumatic Stress; Emotional Exhaustion; Personal Accomplishment; Depersonalization; Self-compassion; Mindfulness

CFT, Compassion Focused Therapy; *MSC*, Mindful Self-Compassion; *CMT*, Compassionate Mind Training; *CBCT*, Cognitively Based Compassion Training; *LKM*, Loving Kindness Meditation; *HCPs*, Healthcare Professionals; *ICOP*, Internet-based Compassion Course; *CCSH-TI*, Compassion-Centered Spiritual Health Team Intervention; *CRCs*, Clinical Research Coordinators; *CCSH*, Compassion-Centered Spiritual Health; *CMT-T*, Compassionate Mind Training program for Teachers; *CMT-Care Homes*, Compassionate Mind Training program for caregivers; *RYC*, Residential Youth Care; *CCT*, Compassion Cultivation Training; *ECEC*, Early Childhood Education; *RCH*, Residential Care Homes

values are generally not reported in the studies, researchers (e.g., Cuijpers et al., 2017) have suggested that pre-post *SMDs* should be avoided in meta-analyses because they may result in biased outcomes. As a way to partially overcome this issue, academics have suggested that the best value to use in such situations would be the correlation based on existing reports of correlations (Cuijpers et al., 2017), such as test-retest correlations of instruments: "Since the variables at issue differ only with regard to time of measurement, the correlation between them should approximate the test-retest reliability" (Lipsey & Wilson, 2001). Besides, this correlation affects the confidence interval around the mean effect size and the assessment of the degree of effect size heterogeneity, not the value of the effect size statistic (Lipsey & Wilson, 2001). Therefore, we used the following correlations: $r = 0.73$ for the Perceived Stress Scale (Cohen et al., 1983); $r = 0.67$ for the Copenhagen Psychosocial Questionnaire (COPSOQ) scale (Thorsen & Bjorner, 2010); and $r = 0.77$ for the Depression, Anxiety, and Stress Scale (DASS) scale (Gomez et al., 2014).

Next, *SMDs* were aggregated following the procedures of Hedges and Olkin (2014), weighting studies with larger samples. As an indicator of homogeneity, we used the *Q statistic* to test the assumption that all studies included shared a common population effect size (Hedges & Olkin, 2014; Higgins et al., 2003) complemented by the *I2 index* to quantify the degree of heterogeneity ranging from 0 to 100% (Higgins et al., 2003). An *I2* value of 25 indicates low heterogeneity and means that 25% of the observed variance between studies is due to real differences in *SMDs* between studies, whereas I2 values of 50 and 75 indicate respectively moderate and high heterogeneity (Higgins et al., 2003). *Random effect models (REM)* were used under the assumption that the variability between studies is not only due to subject-level random sampling error, but also to true variations of effect sizes between studies (Borenstein et al., 2009; Hedges & Vevea, 1998).

Results

Characteristics of the studies

The first research question aimed to investigate the effectiveness of compassion-based interventions in the workplace. Six out of the nine research articles that met the inclusion criteria were conducted in Europe (2 from Sweden, 2 from Portugal, 1 from Germany and 1 from Finland), two in the United States and one in Australia. All the studies were conducted within a 7-year period (2017–2023). The articles included participants from different sectors and occupational backgrounds; five studies were conducted in a healthcare context or with healthcare

professionals, and the rest of the studies were conducted in schools and public and private companies. The sample sizes varied across the studies, ranging from 18 (Johansson et al., 2022) to 95 participants (Vuorinen et al., 2021), with a mean sample size of 49.33 ($SD = 25.04$). Eight out of the nine studies reported participants' gender, being predominantly female (ranging from 74.2% to 98.9%; Matos et al., 2022; Vuorinen et al., 2021). All articles were published after 2017.

Most of the interventions focused on aspects related to positive or negative mental health in the workplace, as well as indicators of well-being or distress at work. Regarding the type of intervention, the studies adopted a variety of frameworks (e.g., CFT, MSC, CMT, CCSH, etc.), including Compassionate Mind Training (CMT; Gilbert, 2014, 2020) and Compassion Cultivating Training (CCT; Jazaieri et al., 2013) as the most prevalent. Only one study measured variables related to the work situation and goal attainment (Orellana-Rios et al., 2017). Related to the expected outcomes of the interventions in relation to well-being, most of the studies included measures of distress (i.e., burnout, stress, anxiety; Andersson et al., 2022; Johansson et al., 2022; Mascaro et al., 2021; Watts et al., 2021), fewer studies included measures of depression (i.e., Andersson et al., 2022; Mascaro et al., 2021; Matos et al., 2022; Orellana-Rios et al., 2017; Watts et al., 2021), and just a couple of studies included positive well-being measures (i.e. satisfaction with life, job satisfaction; Andersson et al., 2022; Scarlet et al., 2017). Only two studies specifically included compassion as an outcome measure (Matos et al., 2022; Vuorinen et al., 2021).

In summary, among similarities, most studies use a similar time period to implement interventions, several studies utilize mindfulness and compassion-based approaches (e.g., all interventions included meditation), and outcome measures often include negative well-being indicators such as stress, depression and burnout. Regarding the differences, the studies used different types of compassion-based interventions (e.g., CFT, CMT, CCSH, CBCT, MSC, LKM, and CCT), different designs (e.g., with and without control group), diverse participant populations (e.g., healthcare professionals, caregivers, teachers), and the specific well-being outcome measures vary across studies.

Therefore, meta-analytic results will only be reported for outcome variables distress and depression. All the results are shown in Table 1.

Pre–post compassion training

Figure 2 depicts the forest plot of the six studies with pre–post training data that includes distress measures (e.g., Perceived Stress Scale, Cohen et al., 1983); and depression measures (Depression Anxiety and Stress Scales, Lovibond & Lovibond, 1995). As can be seen in Table 2, *Q test* shows

that the data were heterogeneous and the *I2 index* indicates that heterogeneity is high (82.8%). *Random effect model (REM)* results show a *standardized mean difference (SMD)* of -0.24, 95% *CI* [-0.62, 0.14], suggesting a non-significant decrease in stress levels between pre- and post-compassion training.

Similarly, Fig. 3 shows the forest plot of the five studies with pre–post training data that includes depression measures (e.g., The hospital anxiety and depression scale, Lovibond & Lovibond, 1995; Zigmond & Snaith, 1983; Depression Anxiety and Stress Scales, Lovibond & Lovibond, 1995). As can be seen in Table 2, the *Q test* shows that the data were heterogeneous, and the *I2 index* indicates that heterogeneity is moderate (67.2%). *Random effect model (REM)* results show a *standardized mean difference (SMD)* of -0.096, 95% *CI* [-0.50, 0.31], suggesting a non-significant decrease in depression levels between pre- and post-compassion training.

Process evaluation

The second research question was related to the process evaluation measures. As can be seen in Table 1, only one of the included studies (11.11%) considered the seven key process evaluation indicators suggested by Linnan and Steckler (2002), five studies (55.55%) considered six, two (22.22%) studies considered 5, and one (11.11%) study considered 4. The average number of process evaluation components found in the studies was 6, ranging from 1 to 7. The nine studies (100%) considered dose delivered, dose received, and implementation. Seven studies (77.77%) included recruitment, also seven (77.77%) included reach, five studies (55.55%) looked at fidelity, and five (55.55%) considered context.

Context

The interventions were conducted in various organizational settings, such as hospitals (Johansson et al., 2022; Mascaro et al., 2021; Orellana-Rios et al., 2017; Scarlet et al., 2017; Watts et al., 2021), public and private organizations (Andersson et al., 2022), education organizations (Matos et al., 2022; Vuorinen et al., 2021), and Residential Care Homes (RCH; Santos et al., 2022). However, four of the studies do not specify the context; for example, the study conducted by Johansson et al. (2022) mentions that the intervention was implemented in different organizations in Sweden, but no further details of the type of organization were provided.

Reach

All studies mentioned the number or percentage of individuals participating in the interventions. These data were also reported in the studies that included control, waiting lists, and experimental groups. As part of reach, three studies contemplated inclusion criteria (i.e., individuals who subjectively experienced perceived stress, people involved in the delivery of services to adolescents, participants previously enrolled in a previous compassion course; Santos et al., 2022; Scarlet et al., 2017; Watts et al., 2021), and only two studies mentioned that all the organization was invited to participate (Andersson et al., 2022; Orellana-Rios et al., 2017).

Dose delivered and dose received

Concerning the dose delivered and dose received, all studies mention that the interventions were successfully implemented, but there is no concrete data to corroborate this (e.g., implementation protocol, potential changes in sessions, time adjustments, etc.).

Fidelity

For fidelity, only four articles mentioned the protocols they relied on to conduct the studies, for example CCSH, CMT, CCT and MSC (Mascaro et al., 2021; Santos et al., 2022; Scarlet et al., 2017; Watts et al., 2021).

Implementation

The studies included a diverse range of compassion-based interventions in the workplace, varying in formats and durations. Some interventions involved in-person 6-week group sessions, covering stress management, emotional regulation, and compassion (Andersson et al., 2022). Others utilized internet-based stress management courses with five modules, including text messages, videos, and reflective exercises (Johansson et al., 2022). There were also four-sessions programs every other week focusing on relationships and accessing compassion (Mascaro et al., 2021). Some interventions included 10-week group programs for cultivating mindful presence (Orellana-Rios et al., 2017), 12-session programs exploring compassion attributes (Santos et al., 2022) and an 8-week compassion training (Scarlet et al., 2017). Furthermore, a comprehensive 63-h intervention covered positive psychology and compassionate leadership (Vuorinen et al., 2021), while a 6-week compassion mind training program was also implemented (Matos et al., 2022).

To accurately measure the implementation, four key components (i.e., reach, dose delivered, dose received, and fidelity) are crucial for successful program implementation. Among the included studies, four of them achieved a 100% implementation rate by fulfilling all four criteria (Matos et al., 2022; Santos et al., 2022; Scarlet et al., 2017; Watts et al., 2021). However, the remaining studies only achieved 50% and 75% implementation rate.

Recruitment

Seven studies provided details about the recruitment methods utilized. Various approaches were used to gather participants from diverse settings, such as HR departments conducting the recruitment (Andersson et al., 2022); employers from municipalities or by advertising on social media (Johansson et al., 2022); educational authorities (Vuorinen et al., 2021); by internal advertisements (Orellana-Rios et al., 2017); from a previous compassion course (Scarlet et al., 2017); in a cluster of schools (Matos et al., 2022); and through internal staff and professional networks (Watts et al., 2021).

Feasibility and acceptability

Feasibility and acceptability were rigorously assessed across multiple domains, including acceptability, implementation, practicality, adaptation, integration, and preliminary effectiveness, using self-reports, program assessment, attrition rates, attendance records, and home practice data (Matos

et al., 2022; Watts et al., 2021). Various assessment methods, such as questionnaires, were employed to evaluate participant's perceptions of the program's credibility and satisfaction (Mascaro et al., 2021). Finally, Orellana-Rios et al. (2017) measured participant's satisfaction with the program.

In summary, most of the studies considered critical process evaluation components, including dose delivered, dose received, reach, and implementation. However, some studies lacked concrete data to corroborate the implementation, and fidelity reporting was limited. Overall, the current evidence highlights the potential benefits of compassion-based interventions in the workplace on a range of outcomes, but further research with improved methodological rigor and larger-scale trials is warranted to enhance the evidence base.

Training transfer

The third research question was related to the training transfer. Most studies did not assess training transfer measures nor longitudinal measures demonstrating the effectiveness of long-term

**Fig. 2** Forest plot of the pre–post stress in compassion training. Random effect model
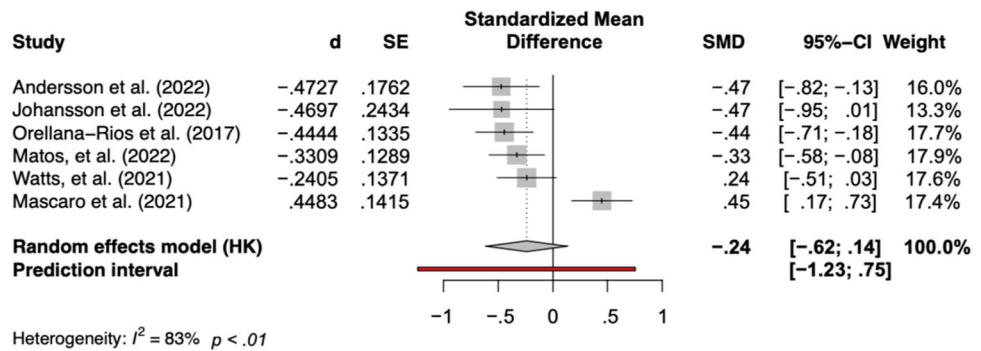
Table 2 Pre–post analyses after compassion training

Outcome	k	N	Random effect model		Homogeneity	
			SMD	95% CI	Q	I^2
Distress	6	147	-0.241	[-0.6169; 0.1358]	29.01**	82.8
Depression	5	134	-0.096	[-0.4964; 0.3045]	12.18*	67.2

K, number of studies; N, total pooled sample size; SMD, Standardized Mean Difference (Cohen's d); 95% CI, 95%-confidence interval; Q, Test of heterogeneity; I^2, amount of variance due to heterogeneity

*p < .05. ***p < 001

Fig. 3 Forest plot of the pre–post-depression in compassion training. Random effect model
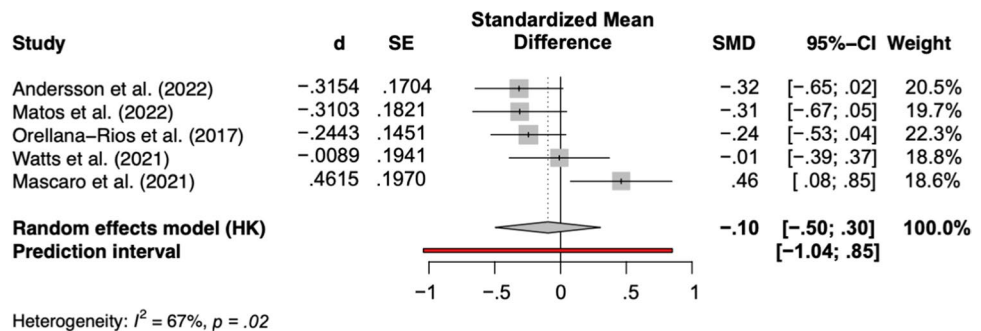
effects. Some studies (Orellana-Rios et al., 2017; Santos et al., 2022; Scarlet et al., 2017) emphasized participants' application of learned techniques in their work settings and daily practices, but they failed to include an explicit measurement of this application in their daily work. Moreover, in certain studies (Mascaro et al., 2021; Santos et al., 2022) participation in interventions was mandatory and scheduled during work hours. One study utilized a mixed-method evaluation approach (Orellana-Rios et al., 2017), incorporating semi-structured interviews and a self-constructed questionnaire to assess integration into work life, motivation, available resources, distressing aspects, and the relationship between compassion and personal well-being.

These insights highlight the need for more comprehensive evaluation methods in compassion-based interventions in the workplace and training transfer. A focus on assessing training transfer measures and the long-term impact of interventions is essential to fully understand their effectiveness. Additionally, it highlights the importance of exploring different evaluation approaches to enhance its benefits for both employees and organizations.

Discussion

This research aimed to synthesize the evidence of compassion-based interventions in the workplace. The three research questions focused on investigating whether these types of interventions have a positive impact on employees' mental health and well-being and which mechanisms, more specifically process evaluation and training transfer, render these interventions effective. In this section, we will answer all the research questions.

Our first research question focused on the meta-analytical effectiveness of compassion-based interventions in the workplace. The quantitative results indicated no significant effects of distress and depression when exploring pre-post intervention changes. These findings can be attributed to several factors. First, the limited number of eligible studies (nine) with measures of distress (six studies) and depression (five) may have restricted the statistical power to detect significant effects. Second, the quality of these studies was relatively low, with deviations from specific standardized protocols and small to medium sample sizes ranging from 18 to 95 participants, impacting analysis precision. In fact, only two studies adopted a randomized-controlled trial (RCT) design to test compassion-based intervention effectiveness. Secondly, concerns arose about the overall quality of the journals where these studies were published, raising questions about the evaluation process's rigor. Finally, insufficient longitudinal data hindered the assessment of long-term outcomes, with only four studies reporting follow-up.

Our second question centered on the identification of process evaluation mechanisms. Our approach to process evaluation follows the model proposed by Linnan and Steckler (2002), which involves documenting and reporting seven key points: context, reach, dose delivered, dose received, fidelity, implementation, and recruitment. Only one study considered all seven key points, indicating that most interventions did not adequately consider the process evaluation, potentially impacting their effectiveness. Considering the context, all interventions were implemented within organizations, although some focused-on employees in general, introducing potential bias, as organizational support can influence participation. However, none of the studies examined how contextual variables might impact the process evaluation.

For reach, all studies mentioned the total number of participants and the presence of a control or waiting list. However, only a few studies mentioned if all organization members were invited to participate, making it challenging to determine adequate reach. Furthermore, there is insufficient information on how effectively the intervention engaged the target population. Regarding fidelity, only four articles mentioned the protocol or theoretical framework followed, but no studies measured protocol adherence. Four crucial components are considered to ensure appropriate intervention implementation: reach, dose delivered, dose received, and fidelity. Four studies achieved 100% implementation, suggesting its significance in determining intervention effectiveness and its impact on results.

Finally, seven studies considered participant recruitment, but further details were lacking. Effective recruitment strategies are essential to ensure that the intervention reaches the intended target population, ensuring meaningful participation and engagement. Another critical factor is whether the participation is voluntary or not. If participation in compassion-based interventions in the workplace is not voluntary, it can have potential implications for the effectiveness and ethical considerations of the intervention. Involuntary participation raises concerns regarding the autonomy and agency of the individuals involved.

Our third research question addresses the transfer of training. The reviewed articles lack of training transfer measures. First, none of the studies followed the model proposed by Baldwin and Ford (1988), which considers trainee characteristics, training design, and contextual factors. This suggests missed opportunities to fully understand and optimize the training transfer from compassion-based interventions to the workplace. Furthermore, the measurement of participants' application of learned practices is lacking; this is crucial for evaluating the transfer of training and understanding the real-world impact of the interventions. Additionally, the support participants received from their organizations or leaders for applying what they learned remains unclear; this can potentially enhance intervention effectiveness and sustainability.

Another important aspect is the absence of follow-up assessments in some studies, with the focus primarily on pre- and post-intervention measurements. Some studies also failed to include control groups to determine whether the improvements in well-being or other outcomes are truly attributable to the compassion intervention itself or to other factors. Without control groups, it is challenging to establish a clear causal relationship between the intervention and the observed outcomes, and without longer-term assessments it becomes difficult to determine if there was a transfer of learned skills and sustained effects over time.

Framework for evaluating the effectiveness of compassion-based interventions in the workplace

The inconsistencies and lack of information in the included articles hinder the design and evaluation of future compassion-based interventions in the workplace. To address this, we have developed a four-phased framework (Fig. 4) for evaluating such interventions, focusing on structural elements, process evaluation, training transfer elements, and well-being outcomes. This framework provides valuable guidance on data collection and effectiveness measurement when implementing compassion-based interventions in the workplace.

Structural elements

There is considerable variation in how compassion is defined and measured across the reviewed articles. This presents an opportunity to consolidate research in the field by developing a consensus on the definition of compassion to unify different theoretical perspectives (Bishop et al., 2004). Similarly, it would be beneficial to consistently measure key variables, especially in interventions targeting psychological mechanisms of action. This includes measuring compassion as a key variable to assess the manipulation check process in various experimental designs. Other variables of interest as mechanisms of action could include prosocial effects of compassion and workplace social resources (e.g., co-worker support, supervisor support, trust, among others).

Furthermore, studies often fail to distinguish between mindfulness, self-compassion and compassion towards others. These constructs share similar theoretical foundations and development techniques (i.e., meditation). Likewise, studies utilize several frameworks or type of compassion-based interventions (e.g., Compassion Focused Therapy (CFT), Compassionate Mind Training (CMT), Cognitively Based Compassion Training (CBCT), etc.) when implementing training. However, it is vital to recognize that different interventions may have distinct outcomes and effects. Without proper differentiation, interpretations can be unclear, and understanding can be confounded. Accurate discernment and separate measurement of each construct are crucial to comprehensively understanding their individual and combined effects in the workplace.

Process evaluation

Future research in this field should strive to report key points on the model proposed by Linnan and Steckler (2002). Specifically, context should include details about environmental, social, and organizational characteristics. For example, Andersson et al. (2022) provided a detailed report on the type of organizational settings they intervened in (i.e., a social services public agency and a private company in the finance sector). Incorporating societal-level distinctions, such as core cultural values (Hofstede, 2001), can add further nuance. By considering and reporting contextual factors, researchers and practitioners can better understand the success or failure of compassion-based interventions in specific settings. It also enables the generalizability and adaptability of interventions in different settings, enhancing their relevance and effectiveness (Babaei et al., 2017). Reporting contextual factors promotes transparency, allowing the scientific community to critically evaluate and compare interventions across diverse contexts.

Next, reach and recruitment provide valuable insights into the representativeness and generalizability of findings. Understanding who is reached and recruited helps assess the external validity of the intervention or study, ensuring applicability to the intended population. Reporting reach and recruitment identifies disparities or barriers influencing participation rates, thus improving intervention accessibility and inclusiveness. For instance, Orellana-Rios et al. (2017) reported that all the staff members of a palliative care center in a faith-based community were invited to participate in a mindfulness and compassion intervention program. Specifically, participants were recruited by means of internal advertising campaigns delivered through the commonly used institutional communication channels. To enhance this information, authors could have also reported the ratio of total number of workers versus recruited participants of the intervention to assess whether there are meaningful differences amongst both groups in terms of demographic variables.

Additionally, understanding and reporting dose delivered and dose received elements help determine the actual level of engagement and compliance amongst participants, which can influence the intervention's effectiveness. Identifying those elements also allows for the identification of potential variations in participants' experiences, enabling researchers to explore the relationship between dose received and intervention outcomes. For example, all studies included in the present research reported on the number of sessions delivered and the number of participants that completed each

session but failed to provide a more detailed account of how the participants put the different skills into practice and how frequently they engaged with those.

Finally, understanding fidelity allows researchers and practitioners to determine if the intervention was implemented with high quality and integrity. Fidelity assessment helps identify any modifications, adaptations, or deviations from the original design, which can have implications for interpreting outcomes. It also allows for replication or adapting successful interventions in other contexts by providing clear guidelines on implementing the intervention. As an example, five out of the four studies included in this research reported adherence to a standardized protocol, but the remaining four failed to provide a more comprehensive description of their adherence to their customized protocols.

Overall, understanding and reporting context, reach, dose delivered, dose received, fidelity, implementation, and recruitment contribute to the validity, generalizability, and applicability of health promotion interventions and research, facilitating evidence-based practice and the improvement of workers health and wellbeing. Additionally, understanding and reporting process evaluation elements contributes to the scientific understanding of the intervention's mechanisms and processes. It enables researchers to identify the key components, strategies, or adaptations that may have influenced the outcomes, providing a foundation for evidence-based practice and the development of effective interventions.

Training transfer

We offer a few recommendations to improve the evaluation and reporting process of compassion-based interventions at work in terms of training transfer. Primarily, we recommend that researchers focus on assessing specific training transfer variables such as frequency and work environment influences (transfer climate, opportunity to perform, accountability) of the practice of specific skills learned in training (Burke & Hutchins, 2007). There is also an absence of measures assessing training transfer mechanisms. By not including measures of training transfer, the included articles fail to capture the real-world effectiveness and practical application of participants' learning in their daily work. Understanding the training transfer of learned compassion skills into daily work activities is essential for evaluating the long-term and the sustainability of the effects of the interventions (Sinclair et al., 2021). It also hinders the identification of factors that facilitate or impede the successful transfer of compassion training, preventing the development of targeted strategies from maximizing the integration of compassionate behaviors in the workplace (Sinclair et al., 2021).

Incorporating robust measures of training transfer can provide valuable insights into the practical utility and organizational impact of compassion-based interventions in the workplace, enhancing their effectiveness and promoting compassionate work cultures. Moreover, it is important to investigate how factors such as motivation and self-efficacy influence training transfer and also examine participants'
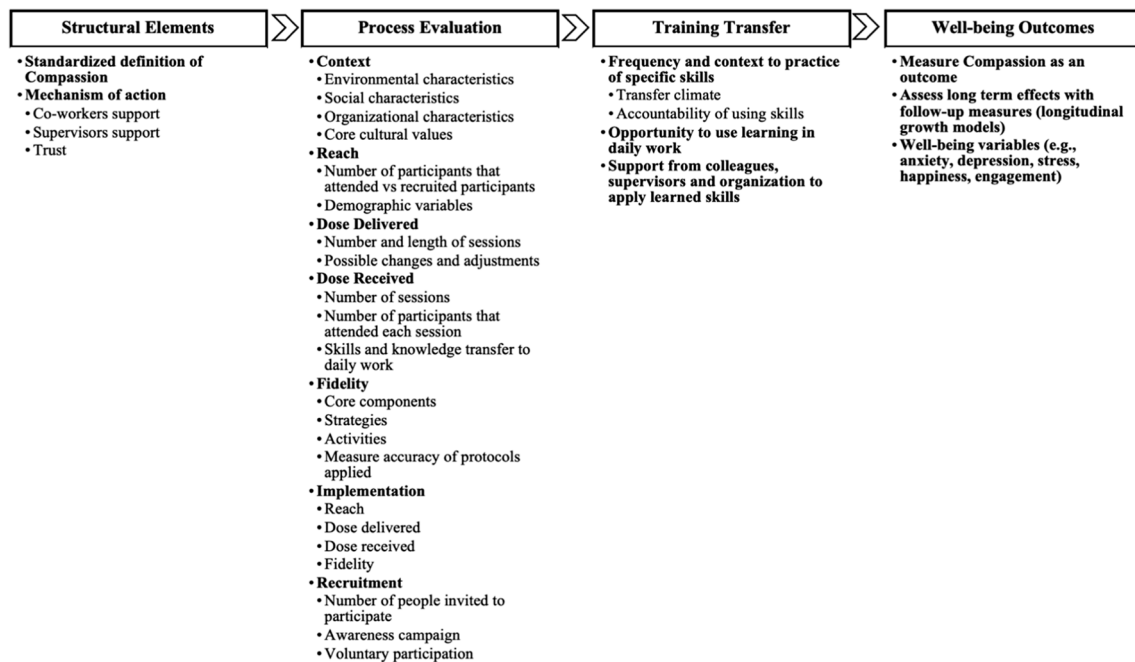
Fig. 4 Assessment of the effectiveness of compassion-based interventions in the workplace framework

characteristics and motivation to better identify individual differences that may influence the transfer process (Blume et al., 2010). Future research should also include contextual factors (i.e., leader support, organization support, organizational resources) to shed light on whether they facilitate or hinder training transfer. Also, it would be interesting to conduct multilevel analysis and examine how various contextual factors interact with specific mechanisms to produce outcomes. This approach would provide valuable insights into the underlying processes and conditions that contribute to the success or failure of the intervention.

Well-being outcomes

It is worth noting that many studies do not measure compassion as an outcome of the interventions. This omission hinders the ability to fully grasp the transformative effects of compassion-based interventions on individuals' compassionate behaviors and attitudes. Not measuring compassion as a direct result of the intervention, researchers and practitioners miss the opportunity to understand and quantify the extent to which these interventions successfully cultivate and enhance compassion in employees. Measuring compassion as an outcome would provide valuable insights into the effectiveness of compassion-based interventions in the workplace and their potential to foster a culture of compassion within organizations (Strauss et al., 2016). Such assessments would enable researchers and practitioners to gauge the impact of these interventions not only on individual well-being but also on the broader social dynamics and relationships within the workplace. We also suggest measuring the mid- to long-term effects of these kinds of interventions, utilizing longitudinal data designs and several follow-up measurements. Potential analytical approaches to incorporate this could include longitudinal growth models (Grimm et al., 2016; Strauss et al., 2016).

Additionally, it is crucial to acknowledge the inadequacy of measuring well-being as an outcome in most of the studies. The included studies in our analysis primarily measured distress and negative outcomes rather than focusing on promotion of mental health and well-being in the workplace. This aligns with the World Health Organization (WHO, 2001) definition of health as a state of complete physical, mental, and social well-being, and not merely the absence of negative aspects but also for the individuals to thrive and flourish. By predominantly focusing on negative aspects, researchers may overlook the complete range of employees' well-being (i.e., engagement, job satisfaction, resilience). Therefore, not measuring and prioritizing well-being, the comprehension of the positive effects that compassion-based interventions in the workplace can have on an individual's overall well-being (i.e., quality of life, job satisfaction, work experience) remains limited. To gain a comprehensive understanding of the potential benefits of compassion-based interventions in the workplace, future studies should incorporate well-being measures that encompass both the absence of distress and the presence of positive mental health outcomes.

Future studies should aim to overcome these limitations by employing larger and more diverse samples, using rigorous experimental designs, exploring different employee groups, publishing in high-impact journals, distinguishing between related constructs, focusing on well-being promotion, and measuring compassion as a distinct outcome variable.

Practical implications

This research reveals a pressing need for substantial enhancements in the design, implementation, and evaluation of compassion-based interventions in the workplace. In response, a proposed *Framework for Evaluating the Effectiveness of Compassion-based Interventions in the Workplace* was introduced, encompassing structural elements, process evaluation, training transfer, and well-being outcomes.

Practical implications for practitioners and researchers involve integrating structural elements, standardizing the definition of compassion, and garnering support from colleagues, leaders, and organizations. Highlighting the evaluation of the intervention process, considering Linnan and Steckler's (2002) seven key components is crucial for refining intervention design. Furthermore, a focus on training transfer (Baldwin & Ford, 1988) emphasizes the practical application of learned skills by employees, necessitating the incorporation of strategies and measures to ensure applicability in the workplace.

The call to not solely concentrate on negative outcomes but also consider well-being-related indicators broadens the scope of assessment. Practitioners and researchers are encouraged to explore positive outcomes associated with employee well-being beyond stress and depression. Additionally, the importance of measuring interventions' long-term effects is underlined, underscoring the need for longitudinal studies to ensure lasting positive impacts in the workplace. Furthermore, this is an adaptable framework that can serve as a guide not only for compassion-based interventions in the workplace but also for interventions across diverse settings, offering a versatile tool for enhancing the effectiveness of various intervention approaches.

Limitations and future research

The current study has some limitations. First, there is a scarcity of the included studies that meet the inclusion criteria, with only nine studies fulfilling the requirements, and six and five including measures of distress and depression, respectively. The limited number of studies hinders

the generalizability of findings and restricts the breadth of data available for analysis, potentially leading to biased or inconclusive results. Related to this, most of the studies that empirically evaluated workplace compassion-based interventions used a pre-post design without a control group. This is against the RCT, the gold standard method to evaluate intervention effectiveness (Guyatt et al., 1995). This seriously compromised the meta-analytic results, as without a control group, it is very difficult to establish that the improvements in employee well-being are due to the intervention or something else. This has led researchers to claim that pre-post effect sizes should be avoided in meta-analyses (Cuijpers et al., 2017). However, with nine articles, it was possible to obtain interesting qualitative results about implementing compassion-based interventions in the workplace. In that sense, this research provided explicit recommendations for implementing and evaluating compassion-based interventions. Thus, further research with a broader number of studies is needed to test the validity and reliability of our conclusions, and also to conduct more specific analyses in terms of comparing subgroups or explore the role of moderators (e.g., study design, compassion-based intervention type, compassion measures and gender).

Second, many of the included studies suffer from low-quality experimental designs. The absence of control groups and follow-up measures weakens the internal validity of the research, making it difficult to establish comparisons between groups and examine the long-term effects of compassion-based interventions. This also generates challenges to ascertain whether the observed effects are a direct result of the intervention or influenced by other variables. It could be inferred that this information was not assessed or included in the studies because some of them are pilot studies. Notwithstanding, future research should include more robust designs to draw more precise conclusions.

Another significant limitation is the narrow focus on healthcare professionals (HCPs) in most studies. While understanding the impact of compassion-based interventions on HCPs is undoubtedly important, it limits the generalizability of the findings to other occupational settings. The unique characteristics and demands of healthcare settings may influence the outcomes of the interventions differently than in other organizational settings. Nonetheless, it is understandable that most studies are focused on the field of healthcare, given that compassion is considered a personal resource that helps HCPs promote mental health and well-being, as well as help to prevent and cope with job demands (Bramley & Matiti, 2014). To obtain a more comprehensive understanding of the effectiveness of these interventions, future studies should incorporate diverse samples from various industries and professions.

Another limitation of this study is the incomplete report of the key components of the process evaluation in the included studies. This highlights the lack of integration of process evaluation within the research. The findings demonstrate the significant influence of process evaluation on the effectiveness of interventions, underscoring the crucial need to incorporate it. By not evaluating the process involved in implementing compassion-based intervention in the workplace, researchers and practitioners miss out on valuable insights that can enhance intervention outcomes and inform future implementation strategies. Incorporating a robust process evaluation framework can provide a deeper understanding of how interventions are delivered and received, the reach, fidelity, and implementation and how the context and recruitment techniques may influence the effectiveness, ultimately contributing to more effective evidence-based intervention in the field of compassion (Moore et al., 2015).

Conclusion

This study aimed to contribute to the existing literature on enhancing the effectiveness of compassion-based interventions in the workplace. The findings of this systematic literature review and meta-analysis shed light on the limited number of empirical studies available and provide insights into potential mechanisms influencing intervention effectiveness. Building upon these results, we propose a comprehensive model addressing the process evaluation and the transfer of learned skills to daily work practices, offering a structural framework for designing, implementing, and evaluating compassion-based interventions in the workplace. This framework encompasses four key components: structural elements (i.e., mechanisms of action), process evaluation (i.e., context), training transfer (i.e., the opportunity to use learned skills in daily work), and well-being outcomes (i.e., compassion measures).

Furthermore, our findings suggest future research directions to enhance the effectiveness of compassion-based interventions in the workplace. The ultimate goal is to improve implementation and evaluation standards, with a focus on exploring specific elements of intervention design. This includes considerations such as the context of intervention implementation, the anticipated number of participants, and the length of the sessions. Additionally, attention is directed towards the implementation phase, for example encompassing the actual number of participants attending sessions, promoting a positive organizational climate, flexibility, and adaptability of the intervention. The evaluation process is emphasized, incorporating elements including process evaluation, training transfer, and well-being outcomes.

By undertaking these efforts, there is an opportunity to elevate the standards of compassion-based interventions in the workplace, leading to more impactful and sustainable outcomes for individuals and organizations alike.

Declarations

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