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Understanding the mechanisms of health and wellbeing interventions within workplace settings: a realist review

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Abstract

Background: Workplaces offer an important setting for health and well-being promotion but variability across workplace settings presents challenges to evaluating the effectiveness of programmes and limits the generalizability of findings from experimental trials.

Aim: To develop middle-range realist programme theories (RPTs) to aid the understanding of mechanisms of health and wellbeing interventions within different workplace setting contexts.

Method: A review was conducted following the six steps of realist synthesis. An initial RPT was developed based on existing literature and input from research practice partners. Six published literature and two grey literature databases were searched, and results screened to identify eligible studies. Data were extracted from relevant eligible studies and a narrative synthesis undertaken to code context, mechanism and outcome data to create middle-range RPTs.

Results: Twenty-five eligible studies were identified and used to develop eight middle-range RPTs. 'Health and well-being culture' encompasses and is driven by the other programme theories, and 'inclusivity' is a central factor to be considered in all actions. Crucial contexts are support for health and well-being from leaders and peers, and inclusive methods of implementation and involvement.

Conclusion: RPTs can inform the development and evaluation of workplace health and well-being programmes. Identified outcomes, and their influencing mechanisms, can serve as both intervention targets and progress measures, allowing interventions to acknowledge nuances within their settings and move beyond limited quantitative effectiveness data that is not comparable across workplaces.

1 Introduction

- Workplaces offer an important setting for health and well-being (H&W) promotion, with a high proportion of adults spending significant time in these settings. Working conditions and structures also affect people's H&W and directly impact inequalities in H&W. Long-term sickness leads to economic inactivity and hampers future development in countries worldwide (1, 2).
- There has been a rise in the development of workplace H&W programmes with organisations such as the World Health Organisation (WHO) and the Office of Health Improvement and Disparities (OHID; England) advocating for employers to implement workplace H&W programmes to support the wellbeing of their employees. However, evidence of effectiveness of these initiatives is inconsistent and limited, mainly due to the complexity of workplace settings (3) and employee circumstances. While some studies indicate modest improvements in health behaviours, mental wellbeing, weight management, and reductions in absenteeism (4), others suggest no significant impact (5). Some workplace H&W programmes have even been linked to a decline in psychosocial working conditions and employee H&W (6). The success of workplace H&W programmes can be influenced by various contextual factors, such as organization size, the industry sector, and the demographics of the workforce. This variability in workplace settings presents challenges to

evaluating the effectiveness of programmes and limits the generalizability of findings from experimental trials.

- It is important to understand the underpinning mechanisms of workplace H&W programmes and it has been recommended that future studies examine not only whether a programme works, but also why it works, for whom, and under which conditions (7). A realist evaluation approach allows for a deeper understanding of how specific mechanisms within an intervention work in particular contexts to produce outcomes (8). This approach can help tailor and refine workplace H&W programmes to ensure they are successful, and importantly, do not inadvertently contribute to widening health, economic and social inequalities.
- The aim of this realist review was to expand understanding of mechanisms of H&W interventions within workplace settings as part of a two-stage research process. The purpose of the review was to develop middle-range realist programme theories (RPTs) that could be refined through integration with case study realist evaluation data to produce a final programme theory model as part of a larger study that aims to evaluate cross-regional workplace H&W initiatives using mixed-methods (9).

2 Methods

The realist review followed the six steps of realist synthesis (8): defining a research question; formulating an initial realist program theory; searching for primary studies; selecting the studies and appraising their relevance; extracting, analysing and synthesising relevant data; and refining the RPTs. Review processes and results were reported following the Realist And Meta-narrative Evidence Syntheses: Evolving Standards (RAMESES) publication standards (10) (see supplementary data 1) and registered on PROSPERO (CRD42022303262).

We used a realist synthesis approach to understand complex interventions. The realist methodology accepts complexity and is concerned with understanding and explaining causation, i.e., how and why policies, programmes and interventions achieve their effects through understanding what works for whom and in what context. Within the realist method, interventions were defined according to Context, Mechanism and Outcome (CMO).

Steps 1 and 2: Defining a research question and initial realist programme theory development

The wider study aims and objectives (9) shaped the review scope and research question ‘What are the mechanisms of H&W interventions within workplace settings, and what are the ways through which H&W interventions produce outcomes across different contexts?’.

A scoping search identified the realist review conducted by Roodbari et al. (11) that aligned with our research question and was used as a basis for our review. Roodbari et al. (11) explored organisational interventions that aimed to improve employees’ H&W by changing the way work is designed, organised and managed. Whilst it has been argued that workplace organisational interventions should not be

compared with individual-level workplace interventions, this is in relation to using conventional meta-analytic methods (7). For our review we felt it was important to include a broad range of workplace H&W interventions. We anticipated that mechanisms identified for more complex organisation interventions could also be tested on simpler individual-level interventions implemented in complex workplace environments. The scoping search did identify other reviews of H&W workplace interventions but these did not explore intervention mechanisms (12–15) or were limited in the H&W focus (16). Using the existing findings (11) and input from our research practice partners (SN and SL) we developed our initial programme theory. Given the high quality of existing evidence and significant input into the theory, we decided it was sufficient for our review to focus on updated evidence that could add to previous findings.

Step 3: Searching for primary studies

The published literature databases Medline, CINAHL, PsycArticles, Web of Sciences, Scopus and Cochrane were searched in March 2022 using a search strategy, adapted from Roodbari and colleagues, that was based on the interconnection of three main concepts: health and wellbeing + workplace programmes and interventions + outcomes (health, wellbeing and business) (see supplementary data 2 for the search strategy developed for Medline). During the search strategy development, search terms were shared with our research practice partners (SN and SL) to ensure we had considered and captured all potential search words. The databases ProQuest and Scholar were searched to identify relevant grey literature. Searches were restricted to English language articles only and as this review aimed to locate evidence to add to previous findings (11), searches were limited to 2019 onwards.

Step 4: Study selection and quality appraisal

References identified through the published and grey literature databases were screened by title and abstract against the inclusion and exclusion criteria (Table 1) by CR, COM, MF, CB, FE, CG and FHB. Articles were rejected if they did not specifically address H&W or business outcomes in relation to a workplace H&W intervention. Following screening of references by titles and abstracts, full text articles were reviewed and included or excluded, based on the inclusion and exclusion criteria (Table 1). To ensure rigour in the screening process, all articles were screened in duplicate at both the title/abstract and full-text screening stage. Any discrepancies were reviewed by the relevant researchers and a decision was made whether to include the article for review, involving a third reviewer when necessary.

Table 1
Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
Article in specified date range (published since 2017)	Article out of the specified date range
Article refers to a health and or wellbeing programme introduced in a workplace setting	Article does not refer to a health or wellbeing workplace intervention
Article focuses on health, wellbeing or business outcomes in relation to the introduction of a health and wellbeing workplace intervention	Article is not focused on business, health or wellbeing outcomes
Sufficient context, mechanism and outcome data	Conference abstracts and letters
Intervention is conducted in a high-income country	Insufficient context, mechanism and outcome data
Article published in English language	Intervention not conducted in a high-income country
	Article not published in English language

Articles included at the full article stage were further reviewed and assigned a score for relevance to our research question (i.e. if sufficient context, mechanism and outcome data can be extracted from the article). A score between 1–5 was assigned, where 1 = not relevant and 5 = highly relevant. Articles with relevance and robustness scores of 4 and 5 were included for data extraction. Articles were also assessed for rigour and trustworthiness of methods, along with quality of reporting. However, this was not used to exclude studies as all relevant studies, regardless of methods and reporting, could still contribute to programme theory relating to our research question.

Steps 5 and 6: Data extraction, analysis and synthesis, and refining the realist program theories

Data were extracted and synthesised by CR, COM, MF, CB, FE, CG and FHB who met regularly to discuss the process and share results. Data extracted included bibliographical details of the article, the aim of the study, overall summary of study (including country, setting, population / sample size, design and methods, and limitations), a description of the H&W intervention, stakeholders involved in the design and delivery, and details of any evaluation. Finally, all CMO data from each included study was extracted in full: the intervention context (including whether ominbus or discrete), intervention mechanism information (process, content and perception) and outcomes (proximal, intermediate, distal and organisational, and whether intended or unintended). A narrative synthesis was undertaken using an iterative process to code the CMO data into common themes and map onto the initial programme theory. If-then-because statements (17) were developed for each CMO configuration to illustrate relationships between components and create testable hypotheses (middle-range RPT).

To refine our middle-range RPTs, our practice collaborators commented on preliminary findings and CMO configuration through individual communication and meetings. Our public advisory group (for the wider

project) provided feedback and suggested improvements on CMO configurations during a participatory workshop held after initial data analysis and synthesis were conducted.

2 Results

2.1 Study Characteristics and Intervention Descriptions

There were 25 studies included in this realist review (see Fig. 1). The majority of studies were conducted in North America (Total n = 11; USA, n = 9; Canada, n = 2) (18–28) and Europe (Total n = 9; Denmark, n = 2; Germany, n = 1; Sweden, n = 2; Switzerland, n = 1; UK, n = 3) (29–37), with four studies conducted in Australia and Oceania (Australia, n = 3; New Zealand, n = 1) (38–41) and one in Asia (Korea) (42).

The included studies used a variety of study designs: RCTs and cluster-RCTs (n = 4) (19, 20, 27, 32), non-randomised controlled trial (n = 1) (31), uncontrolled evaluations (n = 3) (25, 37, 42), mixed-methods evaluations (n = 4) (29, 30, 35, 39), process evaluations (n = 4) (23, 34, 38, 41), quasi-experimental study (n = 1) (28), cross-sectional survey (n = 1) (33), and qualitative studies (n = 7) (18, 21, 22, 24, 26, 36, 40).

Interventions from eight studies aimed to improve overall health or a range of health outcomes (e.g. physical activity, diet, stress reduction, fatigue and tobacco use) (20, 22, 24, 26, 27, 32–34), whilst the remaining interventions focused on a specific health behaviour or issue: sedentary behaviour (n = 6) (23, 25, 30, 35, 39, 40), mental health (including occupational stress) (n = 4) (19, 29, 36, 37), CVD risk factors (n = 2) (28, 42), musculoskeletal health (n = 1) (41), job related fatigue (n = 1) (31), alcohol (n = 1) (38), and family and caring pressures (n = 1) (18). The final intervention aimed to improve health, well-being and productivity, targeting employees living with chronic disease (21).

2.2 Main findings – Realist programme theories

- The evidence contributing to each RPT is discussed below with each final middle range RPT reported in Fig. 2 along with the number of studies that informed each theory.
- *RPT#1: Workplace health and wellbeing culture (15 contributing studies)*
- Workplace H&W culture sets the back-drop for workplace H&W initiatives described in studies included in this review, and can be considered the overarching concept from which other programme theories are linked.
- Changing and challenging existing working practices and beliefs was identified as important for developing a positive organisational culture context (20, 26, 28, 30, 35, 36, 38, 40). Although existing workloads and pressures need to be taken into account (35), focus is needed to avoid reverting back to old habits and working patterns (26, 30, 36, 38). In two studies, programmes were compatible with existing organisation values for creating a healthy work culture (21) and regional workplace agendas (32). However, one study was unable to overcome wider (national) cultural beliefs of working beyond legal time limits (42). The final factors in setting a positive workplace culture

context were related to building social connections and peer support through fun, supportive and family-friendly environments (18, 21, 24, 30, 38, 39).

Greater engagement with workplace policies and initiatives, and H&W agendas was reported when employees felt supported by peers, leaders and organisations, and were listened to, valued and encouraged, without feelings of distrust (e.g. information being reported back to management) (21, 24, 37, 38). Increased participation in interventions and healthier behaviours resulted from employees being more motivated (30), enjoying taking part in activities (26, 30), feeling supported by peers, leaders and organisations (23), and when activities were socially and culturally accepted (23, 26), employees did not feel guilty or judged for taking part in activities and healthier behaviours.21 One study found links between employees and leaders (vertical workplace social capital) increased when employees perceived the intervention to be needed and not patronizing (32).

RPT#2: Leadership commitment (16 studies)

Committed leadership precipitated in many forms, from direct involvement in the design or delivery of the intervention, to 'softer' roles of championing for H&W through encouragement and leading by example. Studies stressed the need for involvement by all levels of leadership, with one study highlighting the role of middle management in particular (26).

Commitment of leadership was evident through leaders' active engagement in the design and delivery of H&W interventions (21, 24, 25, 38, 41). Implementation training and guidance enhanced leaders' self-efficacy to improve the H&W of their employees (21, 38). Championing of H&W was a tenet of committed leadership that was achieved through leaders showing enthusiasm (30), leading by example (26, 30, 33), and actively promoting workers to engage in H&W initiatives (19, 22, 25, 26, 34). Committed leaders also leveraged their position and privilege to allocate time and resources to facilitate intervention implementation (27, 41) and embed interventions into existing workplace systems and practice (25, 31, 41).

Committed leadership increased employee buy-in (24) by making them feel supported and encouraged (19, 22, 26, 30, 36), motivated (30, 41), and permitted (22, 30) to engage in interventions without feeling "guilty" (26). Employees also felt that they had greater decision latitude (31) and that they were valued by the organization (26, 30). Conversely, a lack of support from supervisors or employers lead employees to feel unvalued (22). Supportive leadership produced greater engagement with workplace H&W interventions, (22, 30, 33, 37, 39, 41), contributing to improvements in H&W outcomes (19, 41). There was also evidence of improved work outcomes such as employee job satisfaction (31), reduced burnout (31), productivity (41), presenteeism and absenteeism (41) and organisational outcomes including reduced staff turnover (19), improved working conditions (24), and greater staff recruitment (41).

The commitment of leaders to H&W could lead to successful intervention implementation including the development of sustainable, tailored interventions/policies (38). However, several studies reported the challenges that leadership turnover posed to the sustainability of H&W efforts (21, 24). This may be

overcome by evidencing the value of investing in a healthy workplace (21), by embedding H&W into company-wide goals (21) and by engaging in regular communication with key leadership personnel (24).

RPT#3: Infrastructure and resource (19 studies)

Infrastructure and availability of resources are central to the development and implementation of workplace H&W interventions. Evidence within this programme theory suggest that resources and signposting to tailored services can be improved if policy and procedures are transparent and accessible (38). Moreover, if maintenance of organisational stability and structural changes are made in light of the intervention, such as having appropriate equipment and facilitative resources available, the likelihood of effective programme implementation increases (18, 26, 29, 30, 32, 35). For example, this may include improved access to changing facilities, refrigerators and breastfeeding rooms (18) or the addition of workplace equipment to facilitate engagement (35). Having dedicated time (29, 41), capacity (22) and funding (30, 39) supported the implementation process.

If availability of appropriate resources and adaptations to the working environment are made to increase accessibility, employees are more likely to feel capable (18, 20, 21, 24, 38), confident (21), empowered (23), valued (20, 32, 37), positive (35) and are less likely to experience feelings of stress and frustration (20, 22, 29). This is assisted by the addition of employee training to develop knowledge and familiarity with workplace policies (38). Positive outcomes related to this programme theory include improved work-life balance (18, 20), enhanced wellbeing (22, 37), increased productivity (32), social capital (32), personal meaning (20), work capability (20, 22), and organisational commitment (20). Programmes that were offered during work time need to be considerate of organisational demands (18, 20, 22).

RPT#4: Communication (14 studies)

Several studies highlighted the importance of having an open communication strategy and effective interaction between employers and management (18, 24, 29, 37, 38). This led to more participation and buy in to H&W interventions (18, 24) as all stakeholders felt more involved, and that concerns were being listened to and addressed (18), especially when communication was regular and ongoing (31). Communication between employees and managers led to employees being more open and honest in feedback and more likely to disclose issues upfront (38) and employers better understanding work routines and employees' needs, which in turn distilled a sense of feeling valued and mutual understanding (29).

There was uncertainty on how often to send communication out to employees about interventions with some studies reporting that if employees received too much information, this could be easily ignored or forgotten (23, 40) or the message is lost (26), leading to feelings of exclusion (23). Whereas two studies (31, 35) reported the importance of regular communication updates as this helped with engagement and support. Incomplete or insufficient communication about interventions led to employees not knowing when interventions were happening or missing them (37). This could lead to employees feeling and being excluded from H&W interventions.

Other studies (31, 35, 36) reported the importance of peer and co-worker communication to facilitate feelings of support with others in similar situations, for example through support groups (35). Having the opportunity to share successes, and challenges, was found to lead to greater enthusiasm and higher intervention engagement (36). Some studies (23, 38) found that it was important to use different ways of communicating so that all employees received the message and understood it clearly, for example via payslip insets, emails, workplace intranets, and flyers in social areas such as staff rooms and lunchrooms (38). Four studies (25, 37, 39, 40) discussed the use of digital communication as a way of engaging employees with H&W interventions. These provided information, supported self-monitoring and acted as reminders, which helped with feelings of motivation, reassurance and support. Educational infographics with motivational messages can work well to communicate to employees (25).

It is important that employees were able to have the opportunity to communicate in an anonymised way and to provide feedback to their employers (24, 37). This bottom-up communication strategy can help employees feel valued by having the opportunity to provide feedback on their H&W. Clear transparent communication can lead to greater trust and engagement in H&W interventions in the workplace (38) and an open environment led to employees being happier to discuss and disclose issues occurring in the workplace (29).

RPT#5 Employee collaboration (12 studies)

Collaboration offers opportunities to listen to each other (feedback between employees and leadership) and discuss work-related challenges. Whilst this theory overlaps with 'communication', it focuses more on joint working and decisions that shape the H&W activities that are delivered in a workplace. All of the studies gave examples of meaningful employee involvement in decision making around H&W interventions in their workplace (18, 21, 24–26, 28–32, 42) leading to feelings of being listened to, understood, valued and having autonomy over workplace H&W decisions and behaviours (18, 21, 24, 28–30, 42). This was also reversed, where failure to consult with employees led to feelings of hierarchy in the workplace with unappealing interventions put in place leading to disengagement in H&W activities (22). Studies identified the importance of collaboration creating 'buy-in' from employees in order to achieve sustained H&W engagement (18, 21, 25, 42).

RPT#6 Employee attributes (5 studies)

This theory encompassed employees' intrinsic motivation to improve H&W (25), perception of the importance of their H&W (21, 22, 35), and sociocultural background (27). The role of employees' personal ability and motivation to engage in healthful behaviours was often considered in intervention development and implementation (21, 27, 35). In some cases, a lack of intrinsic motivation was reported by employees as a barrier to behaviour change and engagement in workplace interventions, despite support from the organisation and leadership (22). Motivation to engage with workplace H&W interventions can be influenced by personal experiences with illness. For instance, employees' personal experience of a heart attack was a motivating factor to participate in a workplace H&W programme (22). Employees with higher levels of motivation and those who place greater importance on their personal

H&W may be more likely to perceive workplace H&W interventions as important and relevant, and therefore, more likely to participate in them (35).

With regard to sociocultural factors, one study reported that in a large warehouse retail company, employees who were female, white, full-time workers, and in sales positions were most likely to participate in a workplace H&W intervention (27). This may be because individuals with these attributes have greater self-efficacy, agency and perceived permission to engage with H&W interventions, and also perceive H&W interventions as socio-culturally acceptable. Not considering sociocultural characteristics in the design and implementation of workplace H&W programmes could lead to the creation of workplace hierarchy as those who hold less advantaged socio-cultural positions do not receive the same benefit.

RPT#7: Nature of work (10 studies)

Nature of work is a programme theory that heavily influences suitability, accessibility and engagement among employees whose workplace offers H&W initiatives. Evidence relates to specific types of workplace including manufacturers, petrochemical companies and hospital workers (22, 25, 26, 42). Often governed by shift working and great variation across departments in terms of type of work that may have an impact on the ability to participate in workplace interventions and initiatives. This included work that is not only physically but emotionally demanding, taking a toll on employees, leaving little energy and time for self-care and opportunity to partake in H&W activities (22, 25, 26, 42).

Employees believed that given scheduled (and suggested enforced) breaks would help them manage time effectively, allowing them to self-regulate health behaviours through increased autonomy, leading to further opportunity to engage in interventions (22, 35). Moreover, if an intervention is designed to be adaptable across departments and designed to fit the nature of the work conducted e.g. being flexible to production demands in manufacturing settings, this provides a workplace environment conducive to workplace H&W initiative participation (22, 32, 35, 38). When effective adaptations are made to the working environment or the initiatives tailored to suit the nature of work then employees are more likely to feel valued, relevant, empowered, optimistic, hopeful, autonomous, motivated and focused (22, 28, 31, 42).

RPT#8: Inclusivity (7 studies)

The ‘inclusivity’ programme theory is closely linked to ‘employee attributes’ and ‘nature of work’, and needs strong consideration in intervention development and implementation to avoid potential disparities in H&W across the workforce. Studies referred to a number of groups within workforces that might find it particularly difficult to engage with H&W initiatives: shift workers (25), migrant/non-English speaking workers (38), part-time/hourly workers (23, 30), roles without email access (18, 23), and employees with mobility issues (30). Differences in engagement between male and female employees may also be a consideration in some workplaces (25). To set an inclusive context, initiatives should be flexible (18, 23, 38), tailored or personalized (18, 36), and delivered with sufficient frequency (38) using

appropriate methods for wide reach, for example, non-English materials (38) and communication methods other than email (22, 23).

Greater engagement with and increased participation in H&W initiatives were reported when inclusive contexts led to employees feeling valued, included, connected and empowered (18, 23, 38), and were aware of initiatives (23, 38). Feeling valued was also associated with increased productivity (18). The creation or widening of inequalities, creation of hierarchy, and disparities in work-life balance were reported when employees were unable to access initiatives leading to feelings of being unvalued, excluded and isolated (18, 22).

4 Discussion

3.1 Summary of Findings

The purpose of this realist review was to understand how contextual factors in workplace settings stimulate mechanisms to impact the implementation and effect of H&W interventions. We identified eight programme theories that can be applied to the development and evaluation of workplace H&W interventions. Workplace H&W culture encompasses and is driven by the other programme theories, and inclusivity is a central factor to consider in all H&W actions. Particularly crucial contexts are support for H&W from leaders and peers, and inclusive methods of implementation and involvement. Common mechanisms identified across all theories were the feeling of being valued, listened to and having autonomy over H&W decisions. This included being 'permitted' to engage in H&W activities without feeling guilty, leading to employee buy-in and, in the longer-term, H&W being embedded in existing workplace systems and practice. It was also clear that there is a fine balance around the frequency and timing of communication and this needs to be bespoke to organisations to find the most effective communication strategy.

3.2 How it compares to other reviews

Systematic review evidence suggest that workplace H&W initiatives can be effective at improving H&W and organisational outcomes; however, effects are moderate. Brunton et al. (43) identified characteristics of workplace H&W initiatives that align with our programme theories, but mechanisms were not explored. Our findings align with Roodbari and colleagues (11) and highlight the need to develop resources at different organisational levels to improve inclusivity and overall workplace culture. Similarly, recent realist reviews of individual-level workplace H&W interventions found that supportive mechanisms included intervention design and engagement strategies that considered work context and participants' needs, and supervisor support and organisational culture that reinforced cultural fit (44, 45). We also uncovered potential unintended consequences e.g., creation of workplace hierarchy, and implications for health inequalities (46, 47). Research into the implementation of workplace H&W initiatives is limited (13). Our program theories can be applied to future studies to aid categorisation of strategies and explain mechanisms of action.

3.3 Strengths and limitations

This review followed standardised processes and quality assurance methods, and we highlight several strengths of the work. Selection processes ensured we included a broad range of international literature – we were inclusive in our selection of studies provided that sufficient CMO data were reported. Duplicate screening processes were used to select the most relevant studies. We have built on a strong evidence-base (11), with attempts to locate unpublished grey literature. Our CMO configurations and programme theory were developed with policy makers and practitioners throughout, and were further strengthened by public contributors at later stages of development. We also acknowledge limitations in our processes and the evidence included in the review. Time and resource limitations meant that we were unable to contact authors directly for further study details, therefore, we relied on data reported in the articles identified. Journal word limit restrictions may have resulted in valuable CMO data being excluded from reports; however, it is likely that important data would be reported and, whilst valuable, author contact strategies have variable success (48). We limited searches to English language and did not translate any non-English articles. Despite best effort to identify relevant studies, study designs used in the included articles tended to be limited in providing CMO data and it can be difficult to make inferences regarding contexts within which interventions are more likely to be effective. In addition, interpretating distinguishing mechanisms and contextual factors is subjective and complexity in causation is challenging to report. Evidence will be strengthened by future studies with explicit aims of identifying mechanisms of workplace H&W interventions using realist evaluations. Although common themes were identified across a range of interventions, the evidence-base on workplace H&W is dominated by passive, information-only and researcher-led programs (49), and interventions identified in this review mainly fell in this category. Realist synthesis is time consuming resulting in a time lag between literature searches and final programme theory development. This work can be continually developed, with timely evidence updates. Future work is likely to incorporate valuable findings within contexts of post-Covid working environments, although this will take time to permeate.

3.4 Implications for Policy and Practice

The middle-range programme theories developed from this review can inform the development and evaluation of workplace H&W interventions and programmes. We have identified outcomes and their influencing mechanisms, which can serve as both intervention targets and progress measures. These findings move beyond quantitative effectiveness that use limited data that is not comparable across workplaces (e.g. absentee data) and does not allow interventions to acknowledge nuances within their settings (e.g. communication, culture etc).

3.5 Future work and research recommendations

This review captured a broad range of mechanisms through refined programme theories and provides pragmatic conclusions (50). The next stage of our larger programme of work will be the application of our middle-range theories to case study data from workplaces engaged in H&W programmes, and wider stakeholders; thereby, providing context specific and practical recommendations through use of real-life

examples. Following consolidation activities with stakeholders (including public advisory members), our final output will be a programme theory model to illustrate mechanisms, processes and context through which workplace health initiatives impact health and business-related outcomes.

Future research in workplace health and wellbeing needs to capture the complexity of health improvement in these settings, taking into consideration wider contexts such as the gig-economy and post-Covid working practices such as the increased use of hybrid and remote working in some industries (51). It is important to understand the needs of different stakeholders and which evaluation methods are feasible in such dynamic environments, while also meeting research aims and objectives. Initiative evaluation needs to move away from passive, researcher-led approaches to more sustainable, embedded approaches that focus on workplace policy and working conditions that support employee health and wellbeing.

Declarations

Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Author Contributions

COM, CR, MF, LK, AL and FHB developed the research question and planned the review protocol. COM, CR, MF, SN, SL, AL and FHB formulated the search strategy and inclusion/exclusion criteria. CB conducted the literature searches. COM, CR, MF, CB, CG, FE and FHB screened and selected relevant studies, and conducted the data extraction, analysis and synthesis. COM, CR, MF, AL and FHB drafted and revised the manuscript. All authors provided critical feedback on drafts and approved the final manuscript for submission.

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Data Availability Statement

The Context, Mechanism and Outcome configuration datasets generated for this study can be found in data.ncl.ac.uk at https://doi.org/10.25405/data.ncl.29293700

Figures

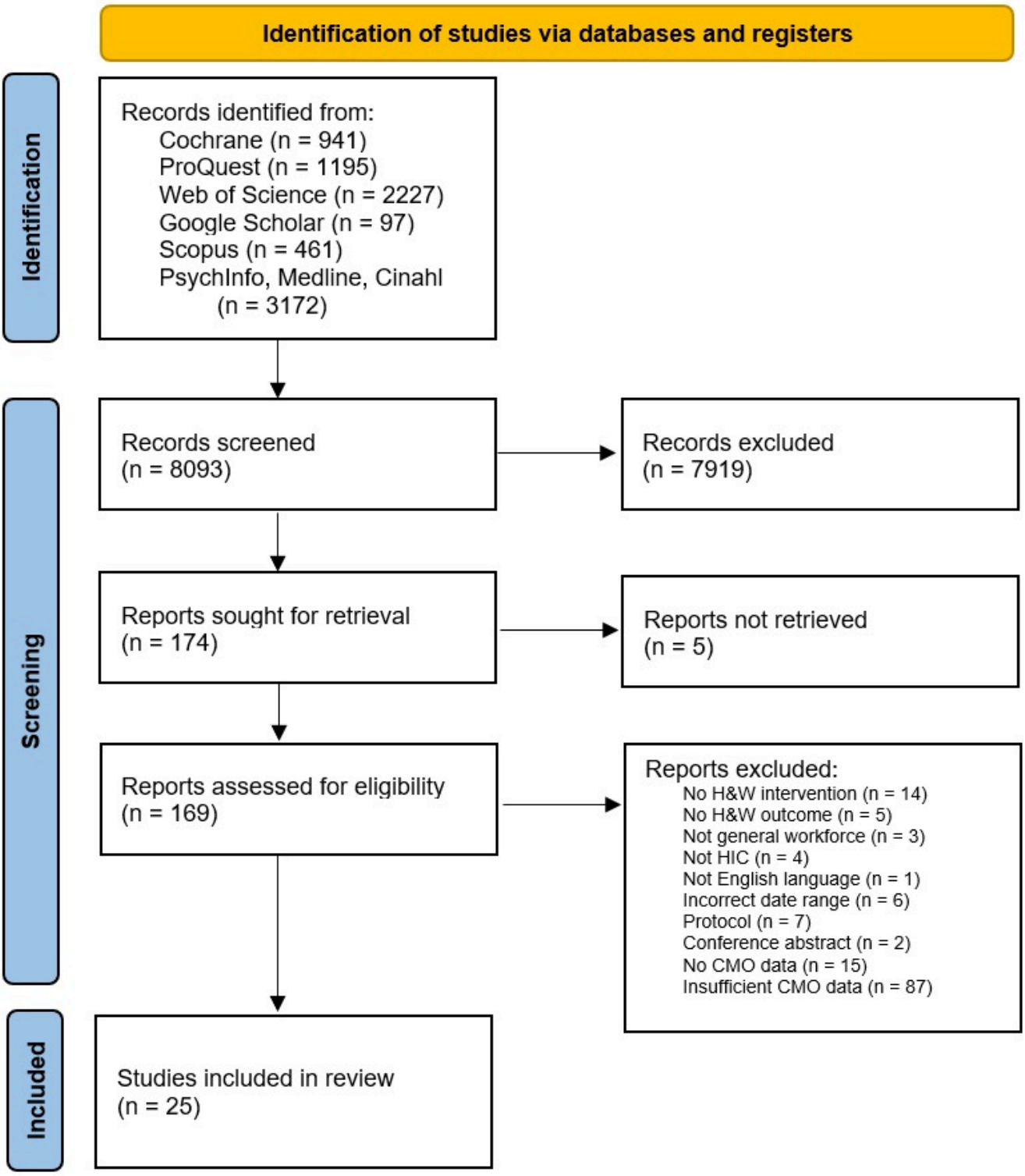


Figure 1

Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) diagram of study selection



Figure 2

Middle range realist programme theories identified to understand the mechanisms of health and wellbeing interventions in workplace settings

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- WorkplaceHealthrealistreviewsupplementarymaterialpreprint.docx