



Expertise
and insight
for the future

Lidia Lipke

Enhancing employees' mental well-being at workplaces

A scoping literature review

Metropolia University of Applied Sciences

Master of Health Care

Health Business Management

Thesis

25th April 2021

Author(s) Title	Lidia Lipke Enhancing employees' mental well-being at workplaces – a scoping literature review
Number of Pages Date	27 pages + 2 appendices 25 April 2021
Degree	Master of Health Care
Degree Programme	Health Business Management
Specialisation option	Health Business Management
Instructor(s)	Marianne Pitkälä, Senior Lecturer
<p>This thesis focused on interventions that support and improve mental well-being of employees. Its purpose was to explore the literature in order to identify interventions derived from positive psychology that enhance mental well-being at work. The aim was twofold: firstly, to identify key characteristics of interventions used to improve mental well-being; secondly to explore how effective those interventions actually are.</p> <p>This thesis used a scoping literature review as its research method and followed Arksey & O'Malley (2005) guidelines. Two database searches were performed in Spring 2019 with the use of Academic Search Ultimate, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Medline and Business Search Ultimate databases. From a total of 242 hits I selected 26 review studies, extracted the data that answers the study questions, charted it and analyzed using content analysis method. All the reviewed articles (n=26) provided evidence for positive effects of analyzed programs and interventions. However, there seems to be no one superior method that would be most effective in improving psychological well-being of employees. Additionally, methods of intervention delivery such as length, dosage and technique might not be a single predictor of effectiveness.</p> <p>This scoping literature review aimed at identifying key characteristics of workplace-based interventions to inform decisions on how to plan and implement effective programs enhancing mental well-being of employees. An important finding of this review is the need for careful tailoring of the trainings and programs. Planning a program beneficial for both employees and the organization requires thorough consideration of recipients' needs, their own commitment as well as individuals' and organizational resources.</p>	
Keywords	mental well-being, mindfulness, resilience, positive psychology, workplace

Contents

1	Introduction	1
2	Background	2
2.1	Well-being at work	2
2.2	Positive psychology	4
2.3	Mindfulness	6
2.4	Resilience	7
3	Methodological approach	9
3.1	Scoping review	9
3.2	Study question	10
3.3	Search strategy	11
3.4	Study selection	12
3.5	Data charting	15
3.6	Data analysis	15
4	Mapping the results of the literature review	16
4.1	Geographical distribution	16
4.2	Intervention recipients' professional groups	17
4.3	Research methods	17
4.4	Type of intervention	18
4.5	Modes of delivery	19
4.6	Intervention provider	20
4.7	Number of sessions	20
4.8	Duration of intervention	20
4.9	Effectiveness	20
4.9.2	Intervention recipients	22
4.9.3	Intervention delivery	22
4.10	Additional consideration	23
5	Discussion	24
5.1	Discussion of the results	24
5.2	Trustworthiness	25
5.3	Ethical considerations	26

Appendices

Appendix 1. Flow diagram of study selection process

Appendix 2a. Data charting form

Appendix 2b. Data charting form – an example

“If psychologists wish to improve the human condition, it is not enough to help those who suffer. The majority of “normal” people also need examples and advice to reach a richer and more fulfilling existence.” Seligman and Csikszentmihalyi (2000)

1 Introduction

According to the findings of the Global Burden of Disease Study 2017 (IHME 2018:13) depressive disorders are the third leading cause of disability in the world. Mental health problems and stress concern mostly the working-age population and in the European Union those have been a reason for increasing levels of absenteeism and unemployment along with long-term disability claims (Shephard & Caan 2012: 27). In a consensus paper from a “Together for Mental Health and Wellbeing” conference European Union’s officials call for improvement of mental health and well-being at workplaces. They invite the stakeholders to implement early intervention and prevention programs promoting mental well-being within the workplaces (EU High-Level Conference 2008).

Workplace interventions aim most commonly at reducing or better coping with stress and at improving, maintaining, and enhancing mental health of the employees (Czabala 2011: 76). Many interventions draw their influences from mindfulness (Lyssenko et al. 2015) and/or positive psychology concepts such as resilience (Abbott et al. 2009, Tonkin et al. 2018, Waite and Richardson 2004). This thesis focuses on interventions that support and improve mental well-being of employees. Its purpose is to explore the literature in order to identify interventions derived from positive psychology that enhance mental well-being at work. The aim is twofold: firstly, to identify key characteristics of interventions used to improve mental well-being; secondly to explore how effective those interventions actually are. In the future the results of this thesis might serve as a basis for constructing an evidence-based intervention tool kit that is effective, sustainable, and easy to modify, aiming at improving mental well-being at work. While private and public organizations have established the necessity for supporting their employees in various ways for example to increase productivity and decrease absenteeism, they do not necessarily invest their own resources to develop effective means to achieve that. This potential tool-kit might therefore serve as a value proposition of a business that would present other companies with a ready solution that requires comparatively small investment and brings measurable benefits.

2 Background

2.1 Well-being at work

Well-being is a multifaceted concept and as such defining it might be challenging. Singh et al. (2016: 155) proposes an approach of “optimal experience and functioning” where physical, mental (or psychological) and social aspects are considered. Following this bio-psycho-social approach, Johnson et al. (2018:4) proposes a graphic representation of “thriving people”, as seen in Figure 1.

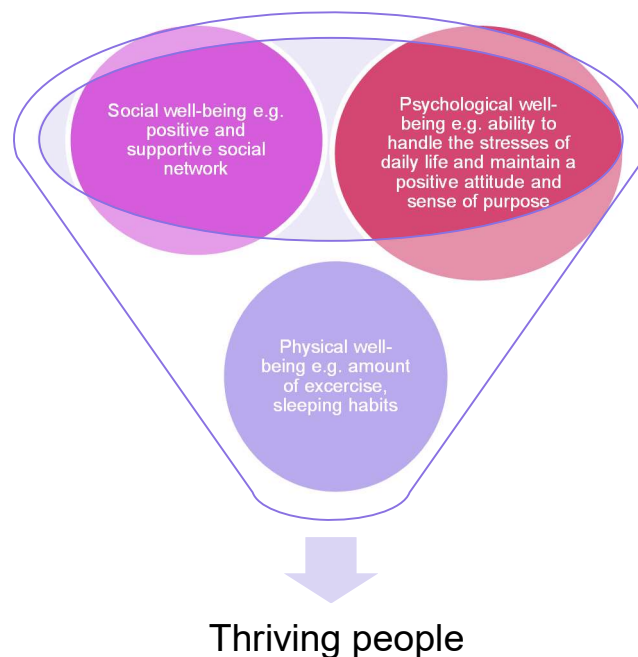


Figure 1. Figure 1. Aspects of well-being (after Johnson et al. 2018: 4).

The concept of well-being derives from two traditions. Hedonic tradition refers to subjective well-being and is concerned with a balance of positive and negative emotions as well as cognitive notion of life satisfaction. Hedonic well-being terms include happiness and positive emotions. Eudemonic tradition refers to psychological well-being and is conveyed by experience of purpose and meaning. It comprises of six key dimensions of self-acceptance, personal growth, purpose in life, positive relationships, autonomy, and environmental mastery. (Singh et al. 2016: 156, Johnson et al. 2018: 7.)

In the literature the terminology of well-being is often unclear and mixes well-being terms with health-related terms, for example “mental health”, “mental well-being” and “positive mental health” are used interchangeably (Weich et al. 2011: 23). Moreover, psychological and mental well-being terms are often used interchangeably when referring to one aspect of well-being, together with physical and social aspects. As mentioned above, psychological well-being also refers to another division of eudemonic versus hedonic well-being. This thesis uses the term of mental well-being when referring to all components of well-being connected to positive (and negative) emotions, positive psychological functioning, attitudes, and mental health.

Parallely to overall wellbeing, also well-being at work is a multidimensional construct (Fisher 2014: 15). In literature various concepts are linked directly to well-being at work and those include “job satisfaction, job involvement, affective organizational commitment, work engagement, positive and negative emotions and moods at work, flow states, intrinsic motivation, thriving, and vigor” (Fisher 2014: 14). Fisher (2014: 15) conceptualized well-being at work that is grounded in both hedonic and eudemonic traditions, as seen in Figure 2.

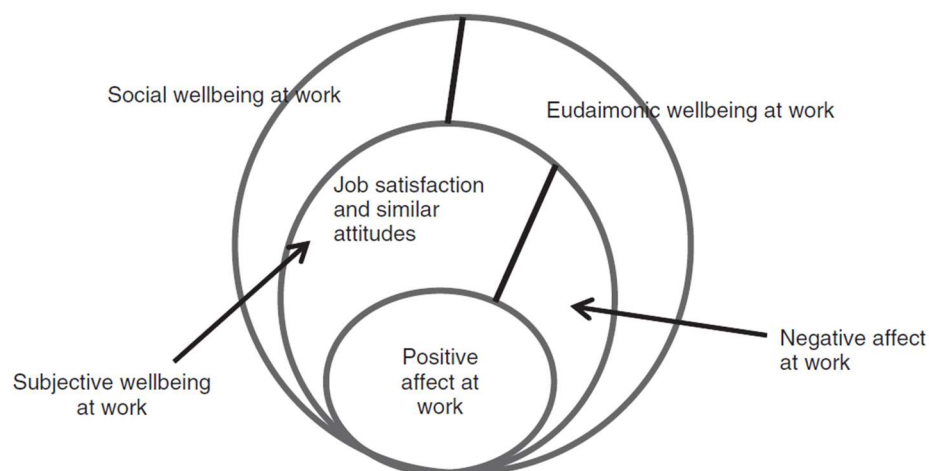


Figure 2. Components of wellbeing at work (after Fisher 2014: 15).

The inner circles of positive affect at work, negative affect at work and job satisfaction refer to hedonic wellbeing. The outer circle is comprised of eudemonic wellbeing that includes experience of growth, meaning, engagement and competence (Fisher 2014: 26), as well as social wellbeing.

Organizations and research representing them pay much attention to failures and weaknesses, neglecting learning from success and the development of strengths (Tinline & Smeed 2014: 259). It is the “positive psychological well-being”, however, that is linked to productivity, profitability, customer satisfaction, employee turnover and service quality (Johnson et al. 2018: 17-18). One facet of well-being at work is also physical well-being that at workplace is connected to physical working conditions, possible accidents and injuries etc. However, when accidents are excluded, mental well-being has the biggest impact on work and vice versa (Johnson et al. 2018: 3) and for those reasons it is the focus of this thesis.

2.2 Positive psychology

Positive psychology is a relatively new branch of psychology. It originates in disillusionment in the disease model that, applied to prevention of mental health problems, proved ineffective (Seligman 2002: 5). It applies the rigor of scientific approach to enhance the best qualities of life, build competency, and amplify positive human traits (Seligman 2002). Positive psychology’s field of interest can be divided into subjective, individual and group levels as pictured in Figure 3 below.

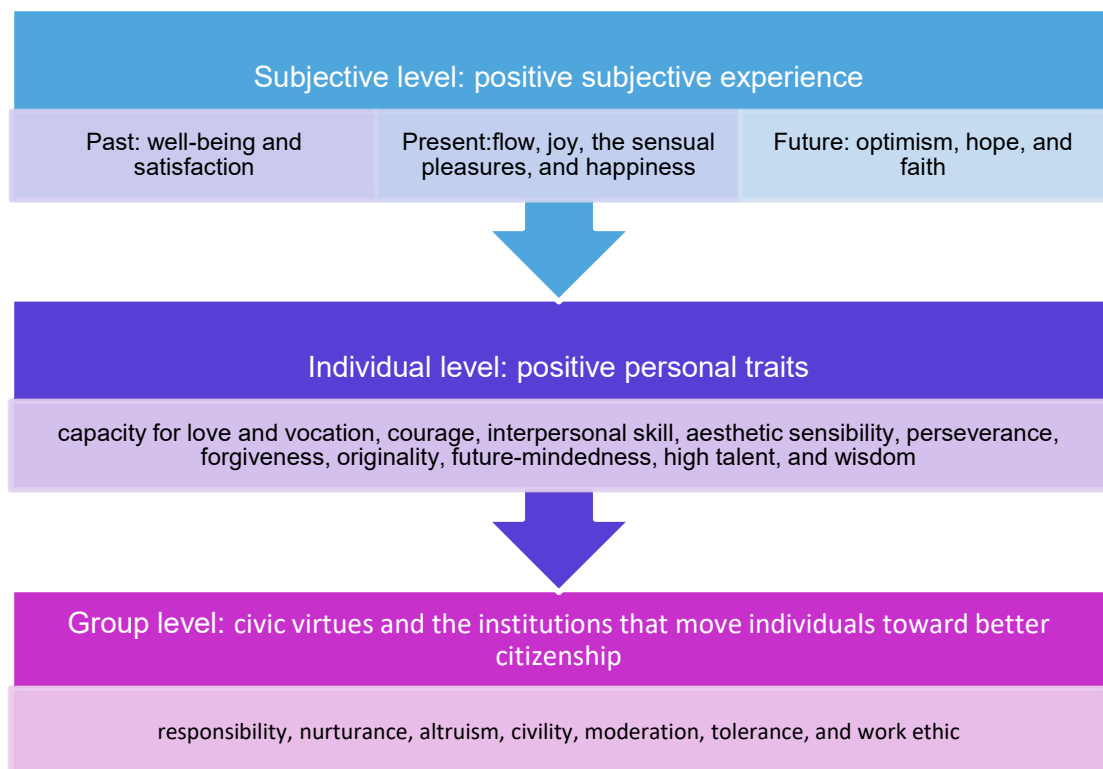


Figure 3. Levels of positive psychology according to Seligman (2002: 3).

Since its origins, positive psychology quickly became an umbrella term for positive approach to research, application, and scholarship, and became an interdisciplinary orientation (Donaldson 2011: 5). This is understandable, as psychology as a discipline, and positive psychology in particular, goes beyond health and disease dichotomy towards other human experiences such as “work, education, insight, love, growth, and play” (Seligman 2002: 4).

As mentioned before positive psychological well-being has been linked to positive outcomes for the organizations (Johnson et al. 2018: 17-18) and for those reasons practical application of positive psychology as “the science of optimal human functioning” for organizations and workplaces gained momentum (Green et al. 2017: 186).

On an organizational level, two main areas of study are positive organizational behavior (POB) and positive organizational scholarship (POS) (Ko & Donaldson 2011:137). At its core POB is focused on individuals’ psychological qualities and how they affect performance, while POS concentrates on organizational context and its positive aspects. The table 1 below presents a more detailed comparison of the two areas.

Table 1. Comparison of positive organizational behavior (POB) and positive organizational scholarship (POS) based on Ko & Donaldson (2011:138-139).

Features	POB	POS
Main definition	the study of positively oriented human resource strengths and psychological capacities that can be measured, developed, and effectively managed for performance improvement	study of especially positive outcomes, processes, and attributes of organizations and their members
Positive psychology levels	subjective: hope, optimism, resiliency, and self-efficacy	group: appreciation, collaboration, virtuousness, vitality, and meaningfulness
Core topics	individual psychological qualities and their impact on performance improvement	positive aspects of the organizational context
Level and methods of analysis	micro- and meso-levels of analysis using survey research	organizational level of analysis using diverse qualitative and quantitative research methods
	an inductive way (i.e., from individual to group to organizational levels of analysis)	a deductive way (i.e. from organizational to group to individual levels of analysis)

While not following a clear distinction in this thesis, its main focus is on an individual experience and well-being at work, thus making it closer to positive organization behavior studies.

2.3 Mindfulness

Jon Kabat-Zinn, the main driving force behind introducing mindfulness meditation practice to behavioral sciences in the late 1970s, defines mindfulness as “the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment” (2003: 145). Mindfulness takes its roots in Buddhism and other Eastern traditions with a mix of phenomenology and other western philosophical systems (Singh et al. 2016: 100). Since mindfulness has been subjected to scientific rigor more definitions and conceptualizations have emerged but, in its core, mindfulness is described as a human quality that can be practiced and cultivated (Singh et al. 2016: 99-100).

Mindfulness is “a flexible state of mind” which allows people to be open to novelty, sensitive to different contexts and perspectives and less judgmental about themselves and others (Langer 2002: 214). Its main overlapping dimensions are attentive dimension and emotion regulation dimension (Singh et al. 2016: 100). Figure 4 presents a conceptualization of mindfulness factors based on a summary by Singh et al. (2016: 100).

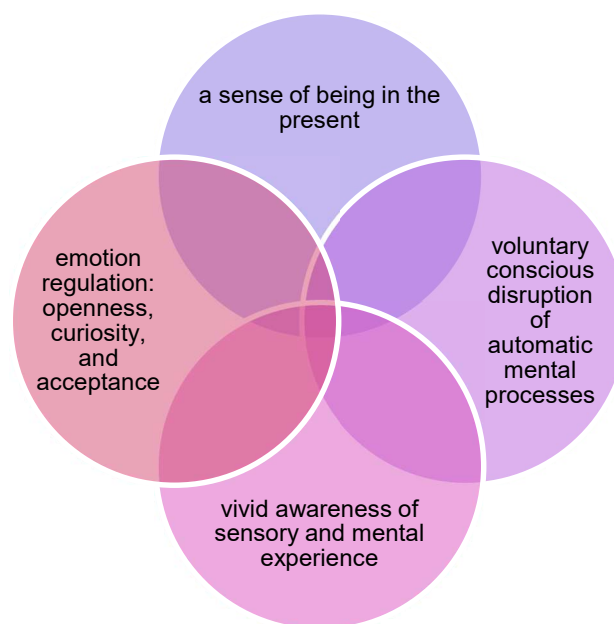


Figure 4. Conceptualization of mindfulness factors (Singh et al. (2016: 100).

The benefits of practicing and cultivating mindfulness have been observed throughout various scientific research and encompass positive psychological, physiological, behavioral and interpersonal effects (Singh et al. 2016: 100). When considering mental well-being at work, mindfulness practice can be particularly valuable for its capacity to regulate emotions, reduce and manage stress. Researchers have observed that regular mindfulness practice aids in reducing cognitive distortions, in promoting cognitive flexibility and in controlling symptoms of mental health disorders such as depression or anxiety. It also reduces emotional reactivity to external stressors while enhancing positive relationships and adaptability. (Singh et al. 2016: 101-102.)

After being introduced into behavioral sciences in 1970s, mindfulness meditation and practice has become integral part of interventions for clinical problems. First intervention to emerge was Kabat-Zinn's Mindfulness-Based Stress Reduction (MBSR) that was initially developed to treat patients with chronic pain. MBSR is a structured 8-week program, where each session lasts 2,5 hours (Singh et al. 2016: 103). MBSR has since been used and researched in a variety of contexts, especially in health care. Among health conditions that MBSR is reported to improve are not only mental health care disorders such as depression and social anxiety disorder, but also chronic conditions such as pain, skin disorders, diabetes, hypertension and heart disease, HIV/AIDS and cancer (Singh et al. 2016: 103).

Other intervention designs based on mindfulness include Mindfulness-Based Cognitive Therapy (MBCT) – a program that incorporates MBSR and cognitive therapy; Dialectical Behavior Therapy (DBT) - cognitive behavior therapy with elements of mindfulness; or Acceptance and Commitment Therapy (ACT) - mindfulness oriented and behavioral activation approach to alleviating psychological distress (Singh et al. 2016:103). The application of mindfulness is not, however, limited to those programs. Namely, there exists a large number of other mindfulness-based interventions (MBIs) that stem from the original MBSR program but in a limited form.

2.4 Resilience

Resilience is a concept deriving from positive psychology. Literature gives multiple definitions of this term (for examples see Table 2 below) but all of them emphasize positive adaptation and ability to overcome adversity (Singh et al. 2016: 36). Resilience research includes people of different age groups as well as organizations.

Table 2. Definitions of resilience after Singh et al. 2016: 36

Author (after Singh et al. 2016: 36)	Definition of resilience
Masten et al. (1990)	“the process of, capacity for, or outcome of successful adaptation despite challenging or threatening circumstances”
Wagnild and Young (1993)	“a personality characteristic that moderates the negative effects of stress and promotes adaptation”
Masten and Reed (2002)	as “a class of phenomena characterized by patterns of positive adaptation in the context of significant adversity or risk,”
Rutter (2006)	“reduced vulnerability to environmental risk experiences, the overcoming of a stress or adversity or a relatively good outcome despite risk experiences”

Resilience is a multidimensional construct. It involves not only individual’s characteristics and skills but also external protective factors (Singh et al. 2016: 39). As such it is a constantly evolving, dynamic trait derived from continuous interaction of individuals with their environment. This interplay results in ability or disability to utilize the available resources. In practice this means that depending on the context the same individual can present with different level of resilience (Singh et al. 2016: 36, 42). Furthermore, research in various settings demonstrate that resilience can be developed (Singh et al. 2016: 42-43).

Resilience has been researched also in an organizational context. On an organizational level resilience refers to business’s ability to thrive regardless of environmental factors, uncertainties, and threats. On an individual employee level resilience is put in a business context and refers to capacity to perform to the best of one’s ability also in stressful, uncertain conditions. (Green et al. 2017: 197.) While introducing the concept of resilience and resilience-building programs might seem self-explanatory for high-risk occupations such as policemen, soldiers, firefighters, or health care professionals, it is also essential for employees exposed to long-term but less acute forms of stress such as work overload, job insecurity or work-life conflict (Vanhove et al. 2016: 280). Nowadays, employee resilience is therefore regarded as a key resource in successful organizations, especially since it is considered as a trait that can be cultivated and developed.

3 Methodological approach

This thesis uses literature review as its research method. Literature review is a well-established and relevant research methodology for health care (e.g. Munn et al. 2018) and business research (Snyder 2019) alike. Its relevance is stressed when integrating interdisciplinary studies. Scoping review has been chosen as a method for this study due to its flexibility and ability to identify key characteristics or factors related to a concept.

3.1 Scoping review

Literature review's aim is to collect, evaluate and present the evidence regarding a particular question or issue (Arksey & O'Malley 2005: 20). As a research method it provides a specific tool set and as such needs to be appropriately chosen and applied (Arksey & O'Malley 2005: 20). Among various literature review methods, a scoping review offers a range of tools applicable when mapping the existing evidence. Its flexible and iterative process allows for a broader view of the existing evidence as contrasted to seeking an answer to a specific question by synthesizing the data (Peters 2016: 1-2). While scoping review has a broader focus comparing to other literature review methods it still needs to have precise objectives and questions as well as clear description of extracting and mapping the data (Peters 2016: 2). Consequently, scoping review is considered a valid research method when applied according to its purpose. The indications for conducting this kind of review according to Munn et al. (2018: 2) are for example identifying the types of existing evidence as well as knowledge gaps in a certain field; clarifying key concepts as well as key characteristics related to a given concept; or identifying research methods employed to examine certain topic. With all those indications scoping review can serve as a precursor to a systematic review.

Arksey & O'Malley (2005) propose the following framework of conducting scoping review. In the first stage a research question is identified. As the aim of review is mapping the evidence a broad question with relatively wide definitions of concepts allows for better coverage and ensuring that relevant articles are not missed. In stage two the relevant studies are identified. Different sources of research evidence and articles can be explored, including electronic databases, reference lists, hand-searching of key journals as well as existing networks, relevant organizations and conferences. The efficiency and practicality of the search may also require limiting the time span and language of availa-

ble evidence. The third stage covers the study selection. While systematic reviews employ the use of inclusion and exclusion criteria early in the planning process, scoping review allows for development of such criteria after familiarizing with existing literature, its language and definitions. After clarification, the inclusion and exclusion criteria are applied to abstracts and full articles in order to identify relevant studies. In the fourth stage the data is charted. This process, parallel to data extraction of systematic reviews, includes sifting, charting and sorting material according to key issues and themes. The data is then entered into forms that may include general information about the study such as author(s), year of publication and study location as well as more specific information relating to scoping review's question such as the study population, the type of intervention, outcome measures employed or the study design. It is worth noting that not always all the required information is stated in the research reports. In the final fifth stage the results are collated, summarized and reported. The number of included reports and articles is usually large in scoping reviews, which is in line with its main purpose of mapping the existing evidence. A concise presentation of such large body of evidence is therefore challenging. Arksey and O'Malley (2005) propose presenting the findings twofold. Firstly, numerical analysis of the extent, nature and distribution of the studies is reported employing tables and charts. Secondly, the material is organized thematically. This includes authors' judgment and interpretation of the studies, and thus requires acknowledging the potential for bias.

3.2 Study question

The purpose of this thesis is to explore the literature in order to identify interventions derived from positive psychology that enhance mental well-being at work. Mapping of existing literature aims firstly at identifying key characteristics of interventions used to improve mental well-being; and secondly at exploring how effective those interventions actually are.

The study questions therefore are:

1. how are the workplace-based interventions that derive from positive psychology organized?
2. which of those interventions are effective in enhancing employees' mental well-being?

3.3 Search strategy

The preliminary literature database searches aiming at familiarization with the topic of well-being as well as identifying relevant keywords for the research were performed in the winter of 2018. Basic keywords such as workplace wellbeing, wellbeing at work, intervention, positive psychology, DBT, therapy, mindfulness, were entered into CINAHL and Medline databases. In the spring of 2019 the relevant literature has been retrieved through two database searches.

The preliminary search resulted in a large body of research as well as multiple previous reviews on the topic. Hence, in order to limit the amount of data to analyze while not compromising the core assumption of scoping review to map the existing evidence it was decided that this review will focus on existing literature reviews. Those reviews present the state of the knowledge on the topic of workplace-based interventions and by including wide range of reviews, primary studies of various methodology became a part of this research.

In the first search used keywords were: interventions or strategies or "best practices" AND workplace or "work environment" or occupational AND resilience or mindfulness or "positive psychology" AND meta-analysis or "systematic review" or "literature review" or "meta analysis" or overview. The search was limited to articles published in academic journals between 2014 and 2019 in English. The search for analyses and reviews from the last five years ensured that also results from older research would be included if relevant to the topic. The databases selected for the first search were Academic Search Ultimate, Cumulative Index to Nursing and Allied Health Literature (CINAHL) and Medline. The inclusion of Academic Search Ultimate database was based on the premise identified in the preliminary review that research in the field of psychological well-being at work is multidisciplinary and approached from different points of view such as psychological, business or medical.

The scoping review method is iterative and therefore author decided to carry out a second search. This search aimed at broadening the perspective and identifying articles related to other businesses, so it applied a modified list of keywords to the Business Source Ultimate database. The specific keywords of resilience or mindfulness or "positive psychology" from the previous search were substituted with more general terms of "mental or well-being" in order to get a better overview on the available literature in a

business-oriented database as opposed to more medical and health-care-oriented databases. Keywords related to the interventions and methodology remained the same, keywords related to the workplace were reduced to “work*”.

3.4 Study selection

The first search resulted in the total of 132 articles. The titles and abstracts of the articles were analyzed to identify workplace related research reports that include the description of interventions and indicators of their efficiency or effectiveness. Basing on the relevance of title and abstract 52 articles were chosen for further selection process. The duplicates were removed only after the abstract selection. This way the author strived to ensure that the choice of articles was consistent between the databases. 18 duplicates were removed leaving 34 articles for further selection process. Further selection process included reading the whole articles and identifying the articles that fulfil two basic criteria. The summary of inclusion and exclusion criteria is show in Table 3.

Table 3. Inclusion and exclusion criteria

	Inclusion criteria	Justification	Exclusion criteria
Publication	Articles published in academic journals between 2014 and 2019 in English	Up-to-date evidence	Articles published before 2014 and in other languages
Population	Workforce, employees	In line with the objectives of the study	Articles presenting: - different setting than workplace - clinical population e.g., depression, anxiety
Intervention	Intervention deriving from positive psychology (e.g. resilience building) or mindfulness interventions aiming at improving well-being. Article included a description / summary of intervention characteristics		Articles describing solely interventions other than positive psychology and/or mindfulness e.g., physical activity. Articles that did not include sufficient description of characteristics
Outcome	Evaluation of effectiveness of interventions		Articles that did not include the evaluation of effectiveness
Study method	Review-type research articles	Current state of the knowledge on the topic in a concise form; reviews include primary studies of various methodology.	literature reviews that did not employ review as a research method

The two inclusion criteria used during reading of whole articles were as follows: the article should be a review-type research article; the article should answer research questions that is it should present interventions enhancing mental well-being at work with their key characteristics and an evaluation of their effectiveness. Both criteria should be fulfilled in order for the article to be selected for the review.

The first search resulted in identification of 21 articles, as shown in Table 4.

Table 4. Results of the first database search

Key words	Database	No. of hits	No. of relevant articles based on title and abstract	No. of articles chosen for analysis
interventions or strategies or "best practices" AND workplace or "work environment" or occupational AND resilience or mindfulness or "positive psychology" AND meta-analysis or "systematic review" or "literature review" or "meta analysis" or overview.	Medline (Ovid)	46	21 (4 articles not available for retrieval)	11
	Academic Search Ultimate (Ebsco)	42	15 (6 duplicates)	7
	Cinahl (Ebsco)	44	16 (12 duplicates)	3
In total:				21
mental or well-being AND interventions or strategies or best practices AND meta-analysis or systematic review or literature review or meta analysis or overview AND work*	Business Source Ultimate	110	18 (2 duplicates, 4 not available for retrieval)	5
In total:				26

The first search identified articles from the area of author's interest that is positive psychology and mindfulness. The second search was aimed to broaden the perspective and possibly identify methods and techniques that go outside this approach. Additionally, many articles identified in the first search described interventions aimed at health care professionals only. Those were included for the further selection process as the scope of this work does not exclude any professional group. However, to identify more articles related to other industries in the second search Business Source Ultimate database was chosen. This search resulted in the total of 110 articles. The titles and abstracts of the articles were analyzed, and 18 articles were identified based on the same inclusion criteria as previously. 2 duplicates were removed only after the abstract selection resulting in 16 new articles. Out of those, 4 articles were not available for retrieval to the author, and 7 articles were excluded according to further selection using to the same

criteria described above. 5 articles were included for further analysis, as presented in Table 4.

As a result of both searches the total of 26 articles were chosen for further analysis, as is presented in the flow chart (Figure 5) below.

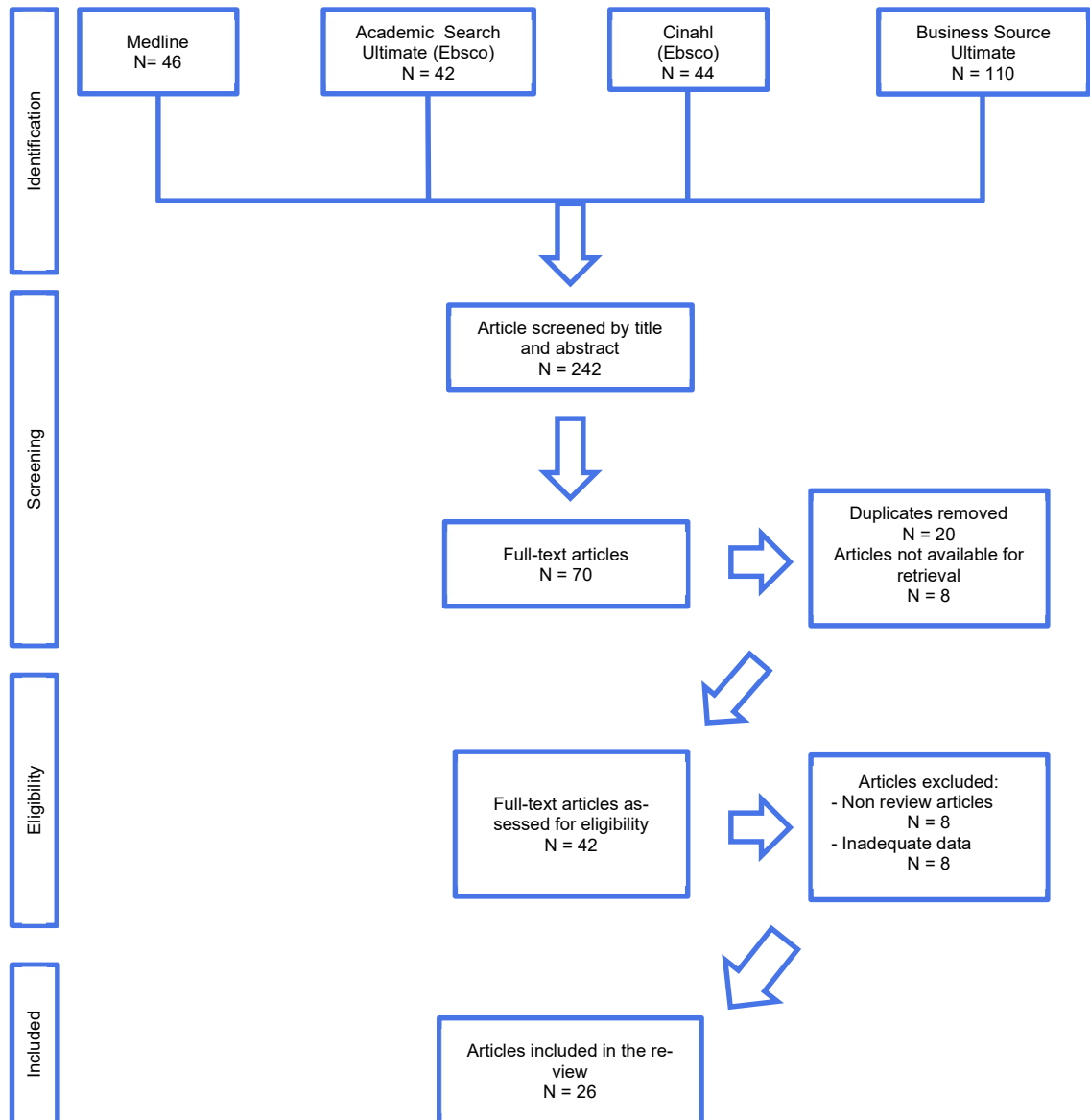


Figure 5. The flow chart of study selection process

Even though a scoping review method does not require critical appraisal of selected articles, it was nevertheless performed. A critical appraisal instrument for Systematic Reviews developed for Joanna Briggs Institute (JBI) was used. This instrument allows for appraising quantitative and qualitative systematic reviews as well as meta-analyses (Aromataris et. al 2015). The quality of all appraised articles was sufficient with the lowest

score of 6 out of 11 and therefore all were included in the review. The summary of all selected articles including critical appraisal can be found from Appendix 1.

3.5 Data charting

In order to chart the data that answers the research questions a data charting form has been developed. The form includes the basic information about the article (its author/authors, title, year and journal of publication) as well as the study (method, number of reviewed studies and information about participants of those studies). Further it helps to gather information about the interventions studied, such as the components and modes of delivery, number of sessions and duration of the whole programme. The next charted data contains information about the effects of the interventions as well as the conclusions of the research authors.

The data charting form has been piloted on 5 randomly chosen articles (19% of all articles) and amended. An empty data charting form as well as one example of data charting of an article can be found in Appendix 2a and 2b.

3.6 Data analysis

As charting and organization of the data into categories cannot be considered as an analysis of the material (Tuomi & Sarajärvi 2018) this thesis further employs elements of content analysis as a tool of analyzing the charted data. In order to answer the first study question data from charted categories regarding research participants and intervention characteristics have been aggregated, grouped and if required descriptive statistics have been employed. The data related to the second study question regarding the effectiveness of interventions has been organized thematically (Arksey & O'Malley 2005) with strength of evidence and the potential influence of various characteristics on effectiveness as main themes. As performing a scoping review is an iterative process, an additional recurrent theme of practical considerations for implementation of programs in workplaces raised during data analysis and was therefore included in the review as a relevant finding.

4 Mapping the results of the literature review

4.1 Geographical distribution

Most reviewed studies were conducted on USA population – only one research out of 18 that mentioned geographical data did not include a study from USA. One research specified continents only additionally to USA. These were Europe and Asia. Out of European countries represented in other research there were: Italy, United Kingdom, Sweden, Netherlands, Norway, Spain, Austria, Germany, Finland, Poland, Greece and Portugal. Asia is represented by research deriving from China, Iran, Japan, Hong-Kong, Malaysia, Turkey, Taiwan and Israel. Research from other continents is also included and originates from Australia, South America (Mexico, Columbia) and Africa (South Africa and Sierra Leone). Figure 6 presents the geographical distribution of the represented research in graphical form.

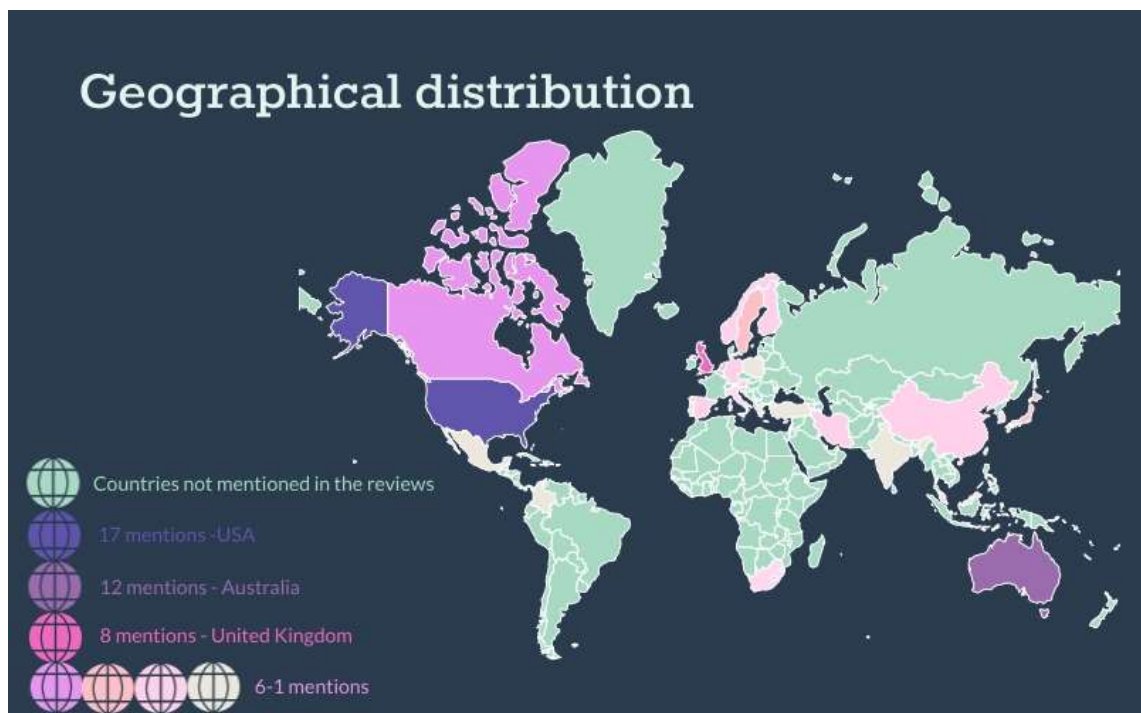


Figure 6. Geographical distribution of represented research.

As shown on a map in Figure 6 most research derives from English-speaking countries, that is USA, Australia, and United Kingdom.

4.2 Intervention recipients' professional groups

The majority of the selected reviews (n=24) stated the interventions' target groups, leaving only two articles that did not mention the occupational groups beyond a statement of "workplace" (Watson et al. 2018) and "work engagement" (Knight et al. 2016). 10 studies focused on workforce using such general terms as "employees" (e.g. Robertson et al. 2015, Stratton et al. 2017) and "working age adults (18-64) that belonged to a workgroup" (Tan et al. 2014) or limiting their search to employees receiving no mental health treatment. Two studies with general workforce population included more detailed description and those were "hourly workers and salaries workers from manufacturing sites" and "full time employees of an insurance company" (Kuster et al. 2017) or a group of white-collar workers, teachers, physicians, hospital staff, police officers and military personnel (Heckenberg et al. 2018).

Remaining 14 articles focused on specific professional groups only. One review studied teachers and the following 13 health care workers of which 5 included exclusively nurses and nursing students, 2 articles studied midwives and 2 focused on physicians.

4.3 Research methods

Following the inclusion criteria, only articles that presented synthesized data from other studies were used for mapping the literature of workplace-based interventions aiming at enhancing employees' mental well-being, as shown in Figure 7.

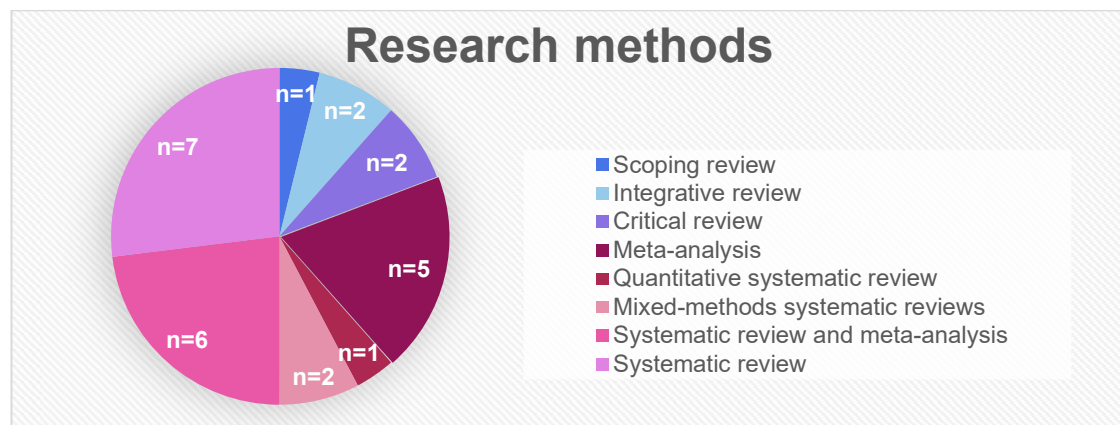


Figure 7. Research methods

Out of 26 articles 1 was a scoping review, 2 were integrative reviews and 2 - critical reviews. The remaining 22 were more systematic: 5 were meta-analyses, 1 quantitative

systematic review, 2 mixed-methods systematic reviews, 7 systematic reviews and 6 systematic reviews and meta-analysis. The number of individual studies included in the reviews ranged from 2 to 116, with a mean of 23 and median 16.

4.4 Type of intervention

Even though the basic framework of workplace-based interventions has already been limited during the search to mindfulness and positive psychology, a wide range of approaches, techniques and programs was identified, as presented in Figure 8 below. Most reviews synthesized results of various interventions. Six out of 26 articles focused on MBSR or a modified version on MBSR only. Another five articles included MBSR or its modified version among other approaches. Additionally, 11 articles included some form of mindfulness practice amounting to 85% (n=22) for all forms of mindfulness that were included in the reviews. Second biggest intervention group was related to stress management techniques (n=14), including such elements as time management, desensitization, self-regulation, imagery and psychoeducation. Meditation, as a separate intervention from mindfulness-based programs, was mentioned in 8 articles. Another intervention group, resilience training, was included in 6 reviews. Resilience training included such topics as self-regulation, self-validation, emotional intelligence, intellectual flexibility, optimism, problem-solving and strong relationships. Equally popular (n=6) was communication skills training, focusing among others on assertiveness and new patterns of communication.

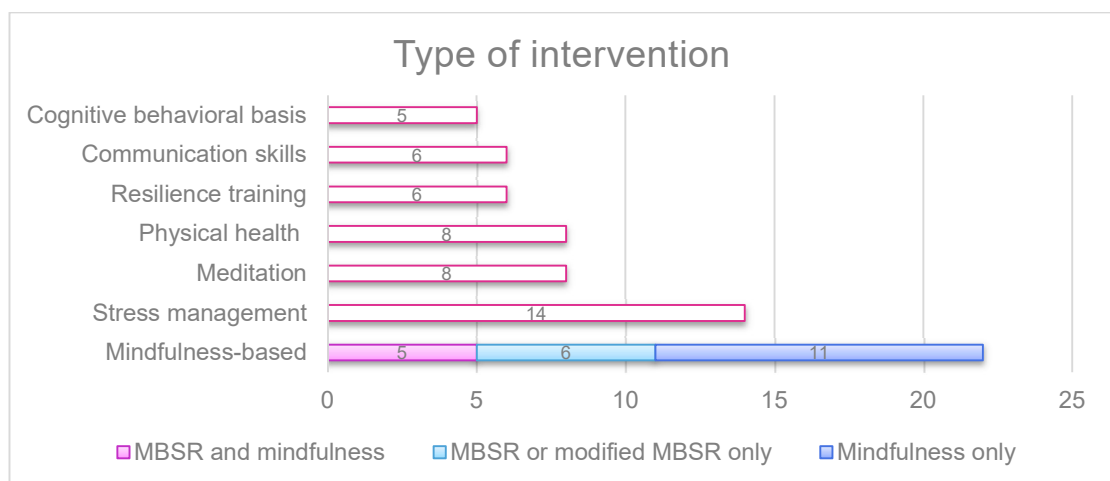


Figure 8. Type of intervention

Even though beyond the scope of this review's research questions, it is worth noting that 31% of the articles (n=8) included interventions affecting physical health directly. Those were for example physical exercise, health and nutrition education, yoga, breathing techniques, muscle relaxation and massage.

4.5 Modes of delivery

Six articles did not specify or extract the data regarding modes of delivery of the interventions. Three of those described MBSR or modified MBSR only which assumes structured face-to-face workshop delivery mode with an optional retreat session. Intervention delivery using face-to-face groups such as workshops or educational sessions accounted for the most popular method (n=21). Out of those, five reviews studied workshop/group as an only delivery method. Conversely, one-to-one methods such as counselling or phone calls, were presented in 6 articles. Methods that relied on subjects' self-administering such as homework, CDs or workbooks were included in 9 articles. Finally, online methods were synthesized in 10 reviews, with two reviews presenting online or homework method only. Not all the cases of online delivery method specified whether interaction between intervention recipients and providers or other recipients was offered.

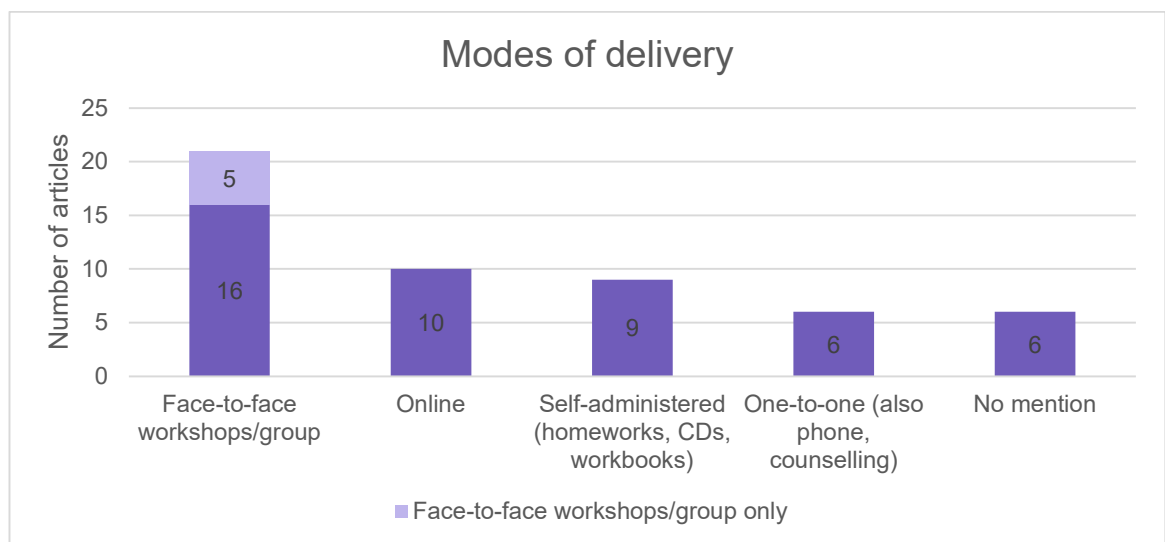


Figure 9. Modes of delivery

Figure 9 above presents the summary of modes in which interventions were delivered.

4.6 Intervention provider

In majority of the studies (n=20, 77%) there was no mention of the intervention providers. In three articles study authors were mentioned to provide the intervention and in four cases these were also trained instructors. One article stated explicitly that the intervention was self-administered via online or audio training and that could be the case in many other articles where no mention of instructor was given.

4.7 Number of sessions

Half of the reviews (n=13) did not extract or provide explicit information about the number of sessions for the interventions analyzed. 3 of those articles analyzed studies based on MBSR method where the number of sessions is standardized. In the remaining reviews the number of sessions varied from 1 (in 7 articles) to 16 (in 1 article), with mean of 6 sessions, median - 6 session and mode – 8 sessions.

4.8 Duration of intervention

Most of the reviews (n= 22, 85%) extracted and provided the data regarding the duration of the whole intervention. It ranged from a single 1-hour session to 5 years long intervention. The reviews differ in the level of accuracy and detail in reporting the duration of the interventions. Nevertheless, the interventions could be divided into short, medium and long, where short interventions last up to 13 days, medium from 2 to 12 weeks and long interventions over 12 weeks. On average the short interventions lasted over 3 days and medium-length interventions lasted 7 weeks (with median of 8 weeks). Excluding single long-term intervention of 5 years, other long interventions lasted approx. 30 weeks on average with median of 6 months.

4.9 Effectiveness

4.9.1 Effect on well-being of employees

All the reviewed articles (n=26) provide evidence for positive effects of analyzed programs and interventions. Out of the reviewed meta-analyses, most focused on mindfulness-based programs such as MBSR or modified MBSR. Thus, most abundant evidence concerns this method. According to meta-analyses, mindfulness based interventions seem effective in reducing perceived stress (Jayawardene et al. 2016),

improving physiological stress response indicators and general health (Heckenberg et al. 2018, Burton et al. 2017, Klingbeil & Renshaw 2018), decreasing psychological distress (Klingbeil & Renshaw 2018, Burton), improving mental health (Stratton et al. 2017), empathy, serenity and sense of self (Burton et al. 2017) and decreasing burnout symptoms (West et al. 2017).

Other interventions with potential to positively affect mental well-being at work studied through meta-analyses are meditation-based interventions (Slemp et al. 2019), cognitive-behavioral skills trainings (Kröll et al. 2017, Tan et al. 2014), relaxation techniques (Kröll et al. 2017), burnout interventions (Dreison et al. 2018), and stress management training (Kröll et al. 2017, West et al. 2017).

Eight out of 10 systematic reviews included studies with elements of mindfulness. Most of them found that mindfulness intervention has potential to improve general psychological health and resilience while decreasing perceived stress (Ravalier et al. 2016), state anxiety and depression (Guillaumie et al. 2017). However, results regarding decreasing burnout were mixed or inconclusive (Guillaumie et al. 2017, Ravalier et al. 2016). Ravalier et al. (2017) observed that meditation has a positive impact on individual and organizational employee outcomes. Positive influence on well-being was also noted by Cleary et al. (2018), Romppanen and Häggman-Laitila (2017), Murray et al. (2015), Pezaro et al. (2017), Robertson et al. (2015) and Watson et al. (2018). However, contrary to above mentioned findings Ivandic et al. (2017) concluded that brief stress management techniques, relaxation, mindfulness meditation, massage, or multidimensional interventions might not be effective in improving mental health and well-being at workplace, even though brief and common positive psychology interventions might prove effective.

All remaining, non-systematic reviews concluded that the analyzed interventions were beneficial to employees, for example they decreased distress and emotional exhaustion (Smith 2014), improved general health and positive orientation to life (Wright et al. 2017), improved work performance (Hunter 2016) and self-management (Delgado et al. 2017) as well as reduced levels of burnout (van der Riet et al. 2018).

Finally, there seems to be no one superior method that would be most effective in improving psychological well-being of employees. Knight et al. (2017) states this

explicitly observing that intervention type is not a moderator for improving work engagement.

4.9.2 Intervention recipients

Results regarding the intervention recipients focused on two aspects. One of those was the impact of occupation on the results. Slemp et al. (2019) noted that corporate sector employees benefited the most from the interventions, following education sector. In this comparison the health care sector employees benefited the least according to Slemp et al. (2019) review. Furthermore, Robertson et al. (2015) found that even with the resilience training US Army personnel's morale weakened during their deployment period.

Second aspect was the need for the selection and engagement of the intervention recipients. Van der Riet et al. (2018) noted that achieving significant positive results from mindfulness meditation requires engagement and regular practice. Statton et al. (2017) concluded that selecting willing intervention participants contributed to better results of the intervention when compared with universally delivered programs.

4.9.3 Intervention delivery

While most of the reviewed articles did not include results concerning impact of delivery mode and other intervention characteristics on the effectiveness of the interventions, 10 articles considered also those aspects. There exists contradictory evidence regarding using online interventions. Three studies (Kuster et al. 2017, Jayawardene et al. 2016, Watson et al. 2018) concluded that online interventions were not effective or as effective as face-to-face interventions. However, Jayawardene et al. (2016) noted that mindfulness skills learnt online were practiced sustainably over longer period of time. Additionally, Cleary et al. (2018) observed that most of the online based interventions were beneficial to its participants.

Furthermore, three studies (Watson et al. 2018, Knight et al. 2017, Cleary et al. 2018) found that out of non-online interventions group-based interventions were superior to other methods. Additionally, Pezaro et al. (2017) concluded that group workshops were an important element of the intervention when aiming at sustaining positive effects.

Two studies (Heckenberg et al. 2018, Klingbeil & Renshaw 2018) evaluated the duration of the intervention as a moderating factor and concluded that increasing the number of

hours of mindfulness training does not improve the effectiveness of the intervention. Klingbeil and Renshaw (2018) set the total dose of an effective intervention at approx. 24 hours while Heckenberg et al. (2018) determined the upper limit at 30 hours.

As for the intervention provider Klingbeil and Renshaw (2018) observed that the program developers delivered more effective interventions than other trained staff.

4.10 Additional consideration

Reviewing the data generated common themes regarding additional practical considerations for implementing workplace-based interventions. While most of the research concluded that the analyzed interventions are overall beneficial, some authors went further to establish that workplace is an important location in delivering preventative mental health programs (Tan et al. 2014) and stress-reducing interventions (Wright et al. 2017). However, it is not enough to simply make those kinds of programs available to employees. Implementing effective interventions requires organizational support and resources. For instance, Tan et al. (2014) remind that many interventions are time consuming and require face-to-face group involvement. This takes considerable additional resources, especially when the employees' schedules are already busy. Managing the time availability is therefore necessary (Cleary et al. 2018) to obtain best effects.

As mentioned before, multiple reviews conclude that there might be no one superior intervention (see: Watson et al. 2018, Slemp et al. 2019). Also, methods of intervention delivery such as length, dosage and technique might not be a single predictor of effectiveness (Burton et al. 2017, Cleary et al. 2018). Simultaneously, Watson et al. (2018) warns against developing a one-size-fits-all model. This would imply that careful planning, customizing, and tailoring the programs is important. Most of the previously described interventions require time and commitment from its recipients to be effective (Watson et al. 2018) and therefore populations' needs should be considered in planning the programs (Stratton et al. 2017).

Not all professional groups benefit similarly from the same intervention. As mentioned before, Robertson et al. (2015) found that US Army personnel's morale and resilience declined despite the intervention. Similarly, Cleary et al. (2018) observed that a short program might not be effective for health professionals. Also, not all individuals within

the same professional group would benefit from the interventions, as seen in Jayawardene et al. (2016) where middle-aged participants benefited more than young ones and volunteers achieved better results with online interventions.

While most of the reviews conclude that workplace-based interventions are beneficial for employees' mental health, employers should not necessarily expect increased job satisfaction. There seems to be mixed evidence regarding this as for example Kröll et al. (2017) found that stress management techniques did not increase employees' job satisfaction. On the contrary, Knight et al. (2017) found a positive effect of the interventions on employees' work engagement.

5 Discussion

5.1 Discussion of the results

Employees today are exposed to various types of stressors, ranging from exposure to potentially traumatic incidents as experienced in high-risk professions, such as police work, up to prolonged stress caused by work overload, job insecurity or work-life conflict that characterize recent changes to labor market. Workplace interventions aiming at improving mental well-being are thus more relevant than ever and simultaneously have the potential of reaching the targeted population directly and timely.

This scoping literature review aiming at identifying key characteristics of workplace-based interventions derived from positive psychology that enhance employees' mental well-being, presents the results of widely researched field, with 26 reviews summarizing findings of hundreds of individual studies. Out of those, 22 reviews included some form of mindfulness practice, whether a structured MBSR program or other less formal training. MBSR is otherwise a well-researched intervention with studies reporting its beneficial effects for both mental and physical health problems such as depression, social anxiety disorder, pain, cancer, heart disease, diabetes, or skin disorders (Singh et al. 2016: 103). Additionally, mindfulness was one of three keywords used in database search that referred to interventions' methods in this study. Thus, it was an expected and desired outcome of the search.

Second important intervention group identified in this review is related to stress management techniques. While stress can contribute to ill health and thus is seen as a relevant

problem to tackle at workplaces, focusing on its management stands in opposition to positive psychology. Positive psychology has been developed to move away from the pathology model as it proved ineffective in prevention of mental health problems (Seligman 2002: 5). Stress management is centered around pathology – stress, and even when it applies methods derived from positive psychology, such as self-regulation and imagery, it still revolves around the problem.

Out of the most commonly used interventions, mindfulness-based programs, stress management and meditation might be considered as universally applicable, especially when considering the wide utilization of MBSR programs. The only limitations in effective application of such programs seems to be employees' own motivation and willingness to invest time and effort. This might not be equally straightforward with resilience training. For example, Robertson et al. (2015) found some professional groups do not benefit from the resilience training. In general, in order to develop and maintain resilience, individual needs to have an opportunity to use it in interaction with the environment. If not, the effects of resilience training and building own resources diminish (Vanhove et al. 2016: 297). This means, that in theory the employees at greatest risk of experiencing stress and adversities will benefit the most from resilience training (Vanhove et al. 2016: 298).

This scoping literature review aimed at identifying key characteristics of workplace-based interventions to inform decisions on how to plan and implement effective programs enhancing mental well-being of employees. An important finding of this review is that there seems to be no single superior intervention nor simple recipe for its delivery. The need for careful tailoring of the trainings and programs rises as a central characteristic of effective intervention. Planning a program beneficial for both employees and the organization requires thorough consideration of recipients' needs, their own commitment as well as individuals' and organizational resources.

5.2 Trustworthiness

This thesis is limited by many factors along the planning, conducting and reporting processes. Firstly, its limitation lies in the time and resources related to Master thesis process. The planning phase commenced already in December 2018 and the database search and study selection was performed in the Spring of 2019. However, analysis of the data did not happen until Spring of 2020. The time and resources also affected the

search process in the sense that only four databases were investigated, with no exploration of other sources as is usual in scoping reviews. Also, in Spring 2019 four articles chosen on the basis of abstract were not available for retrieval with author's resources.

Additional limitation comes from the fact that only one researcher performed study selection, data charting and content analysis. In the selection process, author strived to limit the bias by removing the duplicate articles only after reading all the abstracts. This helped to ensure that articles were chosen consistently regardless of their origin. In data charting phase a piloted data charting form was used to extract, sort and aggregate the data consistently between the articles according to the research aim and questions. In regard to content analysis, the charts and tables picturing the aggregated data were used to improve transparency of the analysis process and reporting.

The results presented in this study can be transferable and applicable to workplaces in United States of America, Australia and United Kingdom, as most of the reviewed research derived from those countries. Additionally, with Europe and Asia strongly represented through their research, the results could be transferable also to those areas.

This research aimed at identifying key characteristics of workplace-based interventions derived from positive psychology that enhance employees' mental well-being. Positive psychology perspective narrows the view of mental well-being to a psychological phenomenon. However, as suggested by the results of this literature review, mental well-being can be affected through targeting physical well-being with exercise, health and nutrition education, yoga, breathing techniques, muscle relaxation or massage. Studies that would explore this angle, especially in comparison with psychological methods could further the understanding of workplace well-being as a bio-psycho-social concept (see e.i. Johnson et al. 2018:4).

5.3 Ethical considerations

Ethical considerations have been a part of this thesis process from start to finish. The recommendations described in the European Code of Conduct for Research Integrity have been a part of the planning, conducting and reporting phases. Through fair, full and transparent reporting of the results the researcher has aspired to be honest and accurate. Throughout the process the author strived for accountability and open collaboration with colleagues undertaking the Master thesis studies. (ALLEA 2017: 6-7.) The author

acknowledges the contribution of other researchers in the report through appropriate citations (ALLEA 2017: 7).

Most of all, this research shows respect and regard for the health and welfare of the community as well as sensitivity to differences in age, gender, culture, religion, ethnic origin or social class (ALLEA 2017: 6). In accordance to ETENE (2010: 5) guidelines on mental health ethics, this research promotes mental health to help people with their lives and everyday activities, especially work.

6 Conclusions

While mental health problems can arise regardless of age, they concern mostly the working-age population which makes workplaces a logical location for provision of preventive measures. The purpose of this thesis was to explore the literature in order to identify interventions derived from positive psychology that enhance mental well-being at work. It aimed at identifying key characteristics of those interventions and at exploring how effective they are. With regards to effectiveness, most of the reviewed research concluded that the analyzed interventions are overall beneficial. However, there seem to be no one superior intervention and no intervention characteristics that would guarantee better universal results. Careful planning and customizing of programs to answer the needs and the organizational context is thus required. This suggest that developing a one-size-fits-all program is not optimal and rather an intervention tool kit that would be sustainable and easy to modify, would be a better option for a business' value proposition.

References

Abbott, J., Klein, B., Hamilton, C. and Rosenthal, A. (2009). The Impact of Online Resilience Training for Sales Managers on Wellbeing and Work Performance. *Electronic Journal of Applied Psychology: General Articles* 5(1): 89-95

ALLEA (2017) The European Code of Conduct for Research Integrity. Revised Edition Berlin: All European Academies

Aromataris, E., Fernandez, R., Godfrey, C., Holly, C., Kahlil, H. and Tungpunkom, P. (2015) Summarizing systematic reviews: methodological development, conduct and reporting of an Umbrella review approach. *International Journal of Evidence Based Healthcare* 13(3):132-40.

Berkowitz, E.N. (2016) *Essentials of Health Care Marketing* 4th edition Amherst: Jones & Bartlett Learning

Czabala, C., Charzynska, K. and Mroziak, B. (2011). Psychosocial interventions in workplace mental health promotion: an overview. *Health Promotion International* 26 (1) i70-i84

Donaldson, S.I. (2011). Determining What Works, If Anything, In Positive Psychology. Donaldson, S. I., Csikszentmihalyi, M., & Nakamura, J. (Eds) *Applied Positive Psychology: Improving Everyday Life, Health, Schools, Work, And Society*. New York and Hove: Psychology Press, 3-11.

ETENE Ministry of Social Affairs and Health The National Advisory Board on Social Welfare and Health Care Ethics (2010.) *Mental health ethics – you and I have a moral responsibility*. Helsinki: Helsinki University Press.

EU High-Level Conference (2008). “Together for Mental Health and Wellbeing” Brussels, 12-13 June 2008. In D. McDaid (Ed). *Mental Health in Workplace Settings*. Consensus paper. Luxembourg

European Network for Workplace Health Promotion. <http://www.enwhp.org/enwhp-initiatives/current-initiative-work-in-tune-with-life/mental-health-at-the-workplace.html> Read 9.12.2018

Fisher, C.D. (2014). Conceptualizing and Measuring Wellbeing at Work. In P.Y. Chen and C. Cooper (eds.), *Wellbeing : A Complete Reference Guide. Volume III. Work and Wellbeing*. Chichester: Wiley Blackwell p.9-33

Green, S., Evans, O. and Williams, B. (2017). Positive Psychology At Work: Research And Practice. In C. Proctor (Ed.) *Positive Psychology Interventions In Practice*, Cham: Springer International Publishing, 185-206

IHME Institute for Health Metrics and Evaluation (2018). *Findings from the Global Burden of Disease Study 2017*. Seattle, WA: IHME.

- Johnson, S., Robertson, I. and Cooper, C. (2018). *Well-being. Productivity and Happiness at Work. 2nd ed.* Houndmills: Palgrave Macmillan
- Ko, I. and Donaldson, S.I. (2011). Applied Positive Organizational Psychology: The State of the Science And Practice. In S.I. Donaldson, M. Csikszentmihalyi and J. Nakamura (eds.) *Applied Positive Psychology: Improving Everyday Life, Health, Schools, Work, And Society.* New York and Hove: Psychology Press, 137-154.
- Langer, E. (2002) Mindfulness Versus Positive Evaluation. In C.R. Snyder And S.J. Lopez (Eds.) *Handbook Of Positive Psychology.* Oxford: Oxford University Press, 214-230
- Lyssenko, L., Muller, G., Kleindienst, N., Schmahl, C., Berger, M., Eifert, G., Kölle, A., Nesch, S., Ommer-Hohl, J., Wenner, M. and Bohus, M. (2015) Life Balance- a mindfulness-based mental health promotion program: conceptualization, implementation, compliance and user satisfaction in a field setting. *BMC Public Health* 15: 740
- Seligman, M.E.P. (2002). Positive Psychology, Positive Prevention, And Positive Therapy. In C.R. Snyder And S.J. Lopez (eds.) *Handbook Of Positive Psychology* Oxford: Oxford University Press, 3-9.
- Seligman, M. and Csikszentmihalyi, M. (2000) Positive Psychology. An introduction. *American Psychologist* 55 (1), 5-14
- Shephard, V. and Caan, W. (2012). Capturing wellbeing at work. *Journal of Public Mental Health*, 11 (1): 27-31
- Singh, K., Junnarkar, M., and Kaur, J. (2016). *Measures of Positive Psychology.* Berlin: Springer
- Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research* 104: 333-339
- Tinline, G. and Smeed, M. (2014). Organizational Coping Strategies and Wellbeing. In P.Y. Chen and C. Cooper (eds.) *Wellbeing : A Complete Reference Guide. Volume III. Work and Wellbeing.* Chichester: Wiley Blackwell, 254-262
- Tonkin, K., Malinen, S., Näswall, K. and Kuntz. J. C. (2018). Building employee resilience through wellbeing in organizations. *Human Resource Dev Quarterly*, 29: 107-124
- Tuomi, J. and Sarajärvi, A. (2018). *Ladullinen tutkimus ja sisällönanalyysi.* Helsinki: Kustannusosakeyhtiö Tammi
- Vanhove, A. J., Herian, M. N., Perez, A. L. U., Harms, P. D., & Lester, P. B. (2016). Can resilience be developed at work? A meta-analytic review of resilience-building programme effectiveness. *Journal of Occupational and Organizational Psychology*, 89(2), 278-307.

Waite, P.J. and Richardson, G. (2004). Determining the efficacy of resiliency training in the worksite. *Journal of allied health* 33(3): 178-183

Weich, S., Brugha, T., King, M., McManus, S., Bebbington, P., Jenkins, R., Cooper, C., McBride, O. and Stewart-Brown, S. (2011). Mental well-being and mental illness: findings from the Adult Psychiatric Morbidity Survey for England 2007. *The British Journal of Psychiatry* 199: 23-28

Articles used for the review

Burton, A., Burgess, C., Dean, S., Koutsopoulou, G. Z., & Hugh-Jones, S. (2017). How effective are Mindfulness-Based interventions for reducing stress among healthcare professionals? A systematic review and Meta-Analysis. *Stress and Health*, 33(1), 3-1.

Cleary, M., Kornhaber, R., Thapa, D. K., West, S., & Visentin, D. (2018). The effectiveness of interventions to improve resilience among health professionals: A systematic review. *Nurse Education Today*, 71, 247-263.

Delgado, C., Upton, D., Ranse, K., Furness, T., & Foster, K. (2017). Nurses' resilience and the emotional labour of nursing work: An integrative review of empirical literature. *International Journal of Nursing Studies*, 70, 71-88.

Dreison, K. C., Luther, L., Bonfils, K. A., Sliter, M. T., McGrew, J. H., & Salyers, M. P. (2018). Job burnout in mental health providers: A meta-analysis of 35 years of intervention research. *Journal of Occupational Health Psychology*, 23(1), 18-30.

Guillaumie, L., Boiral, O., & Champagne, J. (2017). A mixed-methods systematic review of the effects of mindfulness on nurses. *Journal of Advanced Nursing*, 73(5), 1017-1034.

Heckenberg, R. A., Eddy, P., Kent, S., & Wright, B. J. (2018a). Do workplace-based mindfulness meditation programs improve physiological indices of stress? A systematic review and meta-analysis. *Journal of Psychosomatic Research*, 114, 62-71.

Hunter, L. (2016). Making time and space: The impact of mindfulness training on nursing and midwifery practice. A critical interpretative synthesis. *Journal of Clinical Nursing*, 25(7-8), 918-929.

Ivandic, I., Freeman, A., Birner, U., Nowak, D., & Sabariego, C. (2017). A systematic review of brief mental health and well-being interventions in organizational settings. *Scandinavian Journal of Work, Environment & Health*, 43(2), 99-108.

Jayawardene, W., Lohrmann, D., Erbe, R.G., and Torabi, M. R. (2016). Effects of preventive online mindfulness interventions on stress and mindfulness: A meta-analysis of randomized controlled trials. *Preventive Medicine Reports*, 5(C), 150-159.

Klingbeil, D. A., & Renshaw, T. L. (2018). Mindfulness-based interventions for teachers: A meta-analysis of the emerging evidence base. *School Psychology Quarterly*:

The Official Journal of the Division of School Psychology, American Psychological Association, 33(4), 501-511.

Knight, C., Patterson, M., & Dawson, J. (2017). Building work engagement: A systematic review and meta-analysis investigating the effectiveness of work engagement interventions. *Journal of Organizational Behavior*, 38(6), 792-812.

Kröll, C., Doebler, P., & Nüesch, S. (2017). Meta-analytic evidence of the effectiveness of stress management at work. *European Journal of Work and Organizational Psychology*, 26(5), 677-693.

Kuster, A. T., Dalsbø, T. K., Luong Thanh, B. Y., Agarwal, A., Durand-Moreau, Q. V., & Kirkehei, I. (2017). Computer-based versus in-person interventions for preventing and reducing stress in workers. *The Cochrane Database of Systematic Reviews*, 8(8), CD011899.

Murray, M., Murray, L., & Donnelly, M. (2015). Systematic review protocol of interventions to improve the psychological well-being of general practitioners. *Systematic Reviews*, 4(1), 117.

Pezaro, S., Clyne, W., & Fulton, E. A. (2017). A systematic mixed-methods review of interventions, outcomes and experiences for midwives and student midwives in work-related psychological distress. *Midwifery*, 50, 163-173.

Ravalier, J. M., Wegrzynek, P., & Lawton, S. (2016). Systematic review: Complementary therapies and employee well-being. *Occupational Medicine (Oxford, England)*, 66(6), 428-436.

van der Riet, P., Levet-Jones, T. and Aquino-Russell C. (2018). The effectiveness of mindfulness meditation for nurses and nursing students: An integrated literature review. *Nurse Education Today*, 65, 201-211.

Robertson, I. T., Cooper, C. L., Sarkar, M., & Curran, T. (2015). Resilience training in the workplace from 2003 to 2014: A systematic review. *Journal of Occupational and Organizational Psychology*, 88(3), 533-562.

Romppanen, J., & Häggman-Laitila, A. (2017). Interventions for nurses' well-being at work: A quantitative systematic review. *Journal of Advanced Nursing*, 73(7), 1555-1569.

Slemp, G. R., Jach, H. K., Chia, A., Loton, D. J., & Kern, M. L. (2019). Contemplative interventions and employee distress: A meta-analysis. *Stress and Health : Journal of the International Society for the Investigation of Stress*

Smith, S. (2014). Mindfulness-based stress reduction. *International Journal of Nursing Knowledge*, 55(2), 134-135.

Stratton, E., Lampit, A., Choi, I., Calvo, R.A., Harvey, S.B. & Glozier, N. (2017). Effectiveness of eHealth interventions for reducing mental health conditions in employees: A systematic review and meta-analysis. *PLoS One*, 12(12), e0189904.

Tan, L., Wang, M., Modini, M., Joyce, S., Mykletun, A., Christensen, H., & Harvey, S. B. (2014). Preventing the development of depression at work: A systematic review and meta-analysis of universal interventions in the workplace. *BMC Medicine*, 12(1), 74.

Watson, D., Tregaskis, O., Gedikli, C., Vaughn, O., & Semkina, A. (2018). Well-being through learning: A systematic review of learning interventions in the workplace and their impact on well-being. *European Journal of Work and Organizational Psychology*, 27(2), 247-268.

West, C. P., Dyrbye, L. N., Erwin, P. J., & Shanafelt, T. D. (2017). Interventions to prevent and reduce physician burnout. *Obstetrical & Gynecological Survey*, 72(3), 147-149.

Wright, E. M., Matthai, M. T., & Warren, N. (2017). Methods for alleviating stress and increasing resilience in the midwifery community: A scoping review of the literature. *Journal of Midwifery & Women's Health*, 62(6), 737-745.

Appendix 1 – Summary of selected articles

Author Year Country	Purposes	Population Number of reviewed studies Study design	Critical appraisal
Burton, A., Burgess, C., Dean, S., Koutsopoulou, G. Z., & Hugh-Jones, S. 2017 UK	exploring the current state of knowledge on mindfulness-based interventions as a key component to reduce stress among health care professionals	health care professionals: nurses, mental health professionals, primary health clinicians, midwives, healthcare personnel 9 systematic review and meta-analysis	6/11
Cleary, M., Kornhaber, R., Thapa, D. K., West, S., & Visentin, D. 2018 Australia	evaluating the effectiveness of resilience interventions for health care professionals in improving resilience outcomes	health professional 33 systematic review	8/11
Delgado, C., Upton, D., Ranse, K., Furness, T., & Foster, K. 2017 Australia	investigating current research knowledge on nurses' resilience and emotional labour	nurses 27 integrative literature review	9/11
Dreison, K. C., Luther, L., Bonfils, K. A., Sliter, M. T., McGrew, J. H., & Salyers, M. P. 2018 USA	assessing burnout interventions' effectiveness	mental health providers 29 meta-analysis	8/11
Guillaumie, L., Boiral, O., & Champagne, J. 2017 Canada	reviewing the effects of mindfulness-based interventions on Registered Nurses and nursing students	nurses and nursing students 32 mixed-methods systematic review	8/11
Heckenberg, R. A., Eddy, P., Kent, S., & Wright, B. J. 2018 Australia	investigating the effect of mindfulness-based interventions on physiological indicators and biological systems of employees	employees: white collar workers, teachers, physicians, hospital staff, police officers, military personnel 9 systematic review and meta-analysis	6/11

Hunter, L. 2016 UK	exploring nurses' and midwives' perceptions on the impact of mindfulness on their practice	nurses and midwives 5 critical interpretative synthesis	6/11
Ivandic, I., Freeman, A., Birner, U., Nowak, D., & Sabariego, C. 2017 Germany	exploring the current state of knowledge on the effectiveness of brief interventions targeting mental health and well-being of employees versus interventions of common (longer) duration	healthy working population: high stress professions, such as police, healthcare staff or education professionals; office workers, manufacturing workers 20 systematic review	8/11
Jayawardene, Wasantha P., Lohrmann, David K., Erbe, Ryan G., & Torabi, M. R. 2016 USA	examining the impact of preventive online mindfulness interventions on improving short- and long-term outcomes for perceived-stress and mindfulness in non-clinical population	participants of any age from workplaces, receiving no mental health disorder treatment 8 meta-analysis of RCTs	6/11
Klingbeil, D. A., & Renshaw, T. L. 2018 USA	evaluating the use of mindfulness-based interventions with teachers	teachers 29 meta-analysis	9/11
Knight, C., Patterson, M., & Dawson, J. 2017 UK	assessing current state of science regarding the effectiveness of work engagement interventions	workforce 27 systematic review and meta-analysis	10/11
Kröll, C., Doebler, P., & Nüesch, S. 2017 Germany	examining the effects of primary preventive interventions and secondary preventive interventions on employees' psychological health, job satisfaction, job performance and absenteeism	employees 43 meta-analysis	7/11
Kuster, A. T., Dalsbø, T. K., Luong Thanh, B. Y., Agarwal, A., Durand-Moreau, Q. V., & Kirkehei, I. 2017 International cooperation	comparing the effects of computer-based interventions versus in-person interventions for stress prevention and reduction in employees	hourly workers and salaries workers from manufacturing sites, full time employees of an insurance company 2 Cochrane review	9/11

Murray, M., Murray, L., & Donnelly, M. 2015 UK	evaluating the evidence of effectiveness of interventions designed to improve general practitioners' well-being	general practitioners 4 systematic review	6/11
Pezaro, S., Clyne, W., & Fulton, E. A. 2017 UK	locating and exploring the outcomes of the use of interventions designed to support midwives and/or student midwives in work-related psychological distress	midwives (some studies included nurses, doctors, maternity support workers and lecturers) 6 systematic mixed-methods review	11/11
Ravalier, J. M., Wegrzynek, P., & Lawton, S. 2016 UK	exploring the effects of complementary therapies offered in the workplace on employee wellbeing	adult employees without clinical levels of psychological illness 10 systematic review	6/11
Robertson, I. T., Cooper, C. L., Sarkar, M., & Curran, T. 2015 UK	identifying workplace resilience interventions and synthesizing their effects on personal resilience of employees	employees 14 systematic review	7/11
Romppanen, J., & Häggman-Laitila, A. 2017 Finland	investigating the state of knowledge on the interventions aiming improving well-being at work of nurses	nurses 10 quantitative systematic review	9/11
Slemp, G. R., Jach, H. K., Chia, A., Loton, D. J., & Kern, M. L. 2019 Australia	exploring the current state of knowledge on contemplative interventions for employees and their efficacy in relieving psychological distress	employees 116 meta-analysis	8/11
Smith, S.A. 2014 USA	investigating the evidence for MBSR to potentially improve nurses' ability to effectively cope with stress	nurses 13 critical literature review	6/11
Stratton, E., Lampit, A., Choi, I., Calvo, R. A., Harvey, S. B., & Glozier, N. 2017 Australia	assessing the evidence for effectiveness and relative efficacy of different types of eHealth interventions for employees	employees 23 systematic review and meta-analysis	8/11

Tan, L., Wang, M., Modini, M., Joyce, S., Mykletun, A., Christensen, H., & Harvey, S. B. 2014 Australia	exploring the current state of knowledge on work-based universal prevention of depressive illness	working-age adults (18-64) that belonged to a workgroup 12 systematic review and meta-analysis	8/11
van der Riet, P., Levett-Jones, T. and Aquino-Russell C. 2018 Australia	examining and critically appraising the current state of knowledge on mindfulness meditation programs for nurses and nursing students	nurses and nursing students 16 integrated literature review	7/11
Watson, D., Tregaskis, O., Gedikli, C., Vaughn, O., & Semkina, A. 2018 UK	investigating the relationship between learning in work and employees' well-being	employees 41 systematic review	8/11
West, C. P., Dyrbye, L. N., Erwin, P. J., & Shanafelt, T. D. 2017 USA	exploring the current state of knowledge on interventions to prevent and reduce physician burnout	physicians 52 systematic review and meta-analysis	8/11
Wright, E. M., Matthai, M. T., & Warren, N. 2017 USA	determining modalities that help to reduce stress and increase resilience of midwives	midwives 6 scoping review	7/11

Appendix 2a – Data charting form

Record number		
Author		
Year		
Journal		
Study method		
No of reviewed studies		
Participants	setting	
	population	
Intervention characteristics	intervention components	
	modes of delivery	
	interventionists	
	number of sessions	
	duration of intervention	
Effects		
Author's conclusions		

Appendix 2b - Data charting form – an example

Record number	Ref ID 36 - MA1	
Author	Guillaumie, L., Boiral, O., & Champagne, J.	
Year	2017	
Journal	<i>Journal of Advanced Nursing</i> , 73(5), 1017-1034	
Study method	mixed-methods systematic review	
No of reviewed studies	32	
Participants	setting	USA, China, Canada, Italy, Korea, South Africa, UK
	population	nurses
Intervention characteristics	intervention components	relaxation, meditation, MBSR programme, yoga, biofeedback, wellness plan, reiki, guided imagery, breathing, hypnosis, healing touch, cognitive restructuring imagery, autogenic training, laugh therapy,
	modes of delivery	group meetings, homework assignments, CD or audiotape listening, phone interview, written documentation retreats, self-practice,
	33	experienced instructors, researchers
	number of sessions	5 or less, 6-10, 16
	duration of intervention	4 weeks, 1 day, 8 weeks, 3 weeks, 5 weeks, week, 7 weeks, 2 weeks, 10 days, 1 day to 3 weeks, 4-7 weeks, 2-3 months, 12 months
Effects	<p><i>meta-analyses suggest that mindfulness-based interventions may be effective in reducing state anxiety and depression</i></p> <p><i>meta-analysis showed no significant impact for work satisfaction. RCTs measuring burnout, work self-efficacy and work energy reported inconclusive results even though significant impact were observed in uncontrolled studies on work energy</i></p> <p><i>results from meta-analysis indicated no significant impact on blood pressure and pulse rate</i></p> <p><i>mindfulness seems to encourage a closed contact with one's own feelings and needs</i></p> <p><i>mindfulness appeared to facilitate communication with patients and colleagues, mainly because it helped participants maintain better emotional balance and experience less frustration and anger at work</i></p> <p><i>mindfulness increased participants' self-acceptance and their self-awareness of their attitudes and behaviours with others at work</i></p> <p><i>some challenges with the practice of mindfulness were reported, including not having enough time to get to sessions, being agitated or experiencing discomfort during meditation and having difficulties maintaining a daily practice of mindfulness sessions on one's own to maintain the benefits of mindfulness over time.</i></p>	
Author's Conclusions	<p><i>Mindfulness training seems to be an effective strategy for organizations wishing to improve nurses' mental health, as meta-analysis suggests positive effects on anxiety and depression. Promising results were obtained in uncontrolled studies on qualities that may enhance workplace well-being and performance, such as awareness, serenity or empathy. Qualitative studies showed positive benefits on an inner state of calmness and on the adoption of suited communication styles and behaviours in complex and stressful situations with colleagues and patients</i></p>	