

Workplace wellness programs for working mothers: a systematic review

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Systematic Review

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Abstract

Background and objectives: This systematic review aimed to uncover the evidence and benefits of employers' commitment to delivering workplace wellness programs for working mothers.

Methods: The articles published in PubMed, Embase, Scopus, and AgeLine databases between 2017 and 2021 were searched to evaluate the workplace wellness programs for working mothers with at least one resultant wellness or wellbeing (e.g., physical health, less stress, mental health, burnout, depression, smoking, bullying, alcohol consumption, overweight), work-life balance outcome, or job satisfaction.

Results: Four studies that met the criteria were retrieved from databases. They showed some effective workplace wellness programs that can reduce depression, stress, and burnout, improve mental health, healthy behaviours, work-family balance and work-life balance. Working mothers participating in a workplace wellness program generally gain some benefits; one of which is reduced stress typically related to childcare, economic, and personal health issues.

Conclusions: The implementation of workplace wellness programs for working mothers showed positive effects on their health problems and health costs. These four studies revealed that workplace wellness programs specifically designed for working mothers can lead to time efficiency by holding the programs in or near the workplace and implementing them during the workdays. This greatly suits the conditions of many working mothers whose limited time and energy to balance the household, family and work tasks.

Background

Recently, there has been an increase in chronic diseases in the working population with increasing medical expenses [1, 2]. This has an impact on the life quality of employees and their families, as well as harming the sustainability of their company's economic interests [1]. It is important to carry out health promotion and health protection intervention in the workplace [1], including disease prevention programs, for all of the employees. Workplace wellness programs supported by policies can have some advantages, such as mitigating health risks and optimizing the employees' quality of life [3, 4].

A comprehensive setting and proper synchronization between programs, environmental supports, policies, advantages, and relations to the community are highly required to obtain maximum safety and health needs of all workers [3]. According to Berry et al. [5], a workplace wellness program is a program designed systematically and sponsored by the employer to develop healthy behaviours to minimize health risks, improve life quality, gain efficiency and effectiveness, and bring positive impacts on the organization's bottom line.

Workplace wellness programs consist of several activities: screening actions to monitor health risks (e.g., measurement of body weight, biometric measures), preventive interventions to minimize health risks (e.g., vaccination, smoking cessation, physical activities, weight management counselling, access to fitness facilities, stress management, supportive social and physical environments, wearing personal protective

equipment), health promotion to improve a healthy lifestyle (e.g., healthy food options, health education, company policies, workplace bullying), and disease management (e.g., health insurance, on-site medical health centre such as a clinic for workers with or without their families)[2, 3, 4, 6].

Emmons et al. [7] evaluated a workplace health education initiative targeting smoking, diet, and physical activity. Workers in the intervention condition developed an improved healthy diet and exercise behaviours; however, these did not affect their levels of smoking [7]. Sorensen et al. [8] found that a comprehensive workplace malignancy prevention intervention conducted at 15 manufacturing plants reduced the number of smoking stages. As a result, smoking levels dropped significantly over the two years, but a healthy diet did not improve. Golaszewski et al. [9] found that there was an improvement in the workplace environment of a U.S. government's department for over three years. There was a decline found in the hours taken by workers for sick leaves, progress in the worksite environment, and stable employees' risk statuses although some of them were getting older [9]. Short et al. [10] reported the results to Prudential Financial in which physically active workers had a good level of high-density lipoproteins (HDL). The workers joining a disease controlling program were also found to have a declined level of low-density lipoproteins (LDL) and cholesterol in one year matched to a group of non-participants [10]. Byrne et al. [11] presented the findings of their seven-year research (2003–2009) at Vanderbilt University, in which the application of health promotion programs had improved the physical activities of employees from 73–83%. Jackson et al. [12] reported that there was a decline in blood pressure and an increased level of awareness among the workers after the interventions through health education for 6 months (86%) [12]. Merrill et al. [13] compared the employees of Lincoln Industries with those outside Lincoln Industries in terms of four wellness indicators, namely emotional health, physical health, access to health-related services, and engagement in healthy behaviours. It was found that the employees of the Lincoln Industries were better than those outside in three of the four indicators, namely emotional health, physical health, and engagement in healthy behaviours. Neville et al. [14] carried out an 8-year study and revealed that there was an improvement in the health condition of workers with chronic diseases. Long-standing involvement was linked to Body Mass Index (BMI), adjusted blood pressure, cholesterol, and with the highest advantages discovered in the highest-risk group. Berry et al. [15] reported that a U.S. software provider, SAS Institute (The Statistical Analysis System), ran its own worksite full-service health clinics for workers and their families. The services included consultation with a dietician, allergy shots, blood tests, consultation with a psychotherapist, and physical therapy. Workers generated a connection with a primary care physician (a medical home) which guaranteed the continuity of care [15].

Not all workplace wellness programs at the worksite showed positive results on the working mothers' wellness (e.g., mental health, physical health, less stress, depression, burnout, alcohol consumption, smoking, overweight, bullying), job satisfaction, and work-life balance. Thus, a systematic review is needed to better understand the evidence associated with the implementation of wellness programs in the workplace. [1–4, 16, 17].

Working mothers as part of the workers' community are more vulnerable to various health problems compared men or other working women. Health risks emerge from both workplace factors and family

factors, which sometimes are correlated to each other. Working mothers often have to carry out multiple responsibilities at the same time, namely as a housewife, mother raising children [5], working woman [17]. The amount of work they have at home and at work often makes them lack time, energy, physical capacity, psychological acceptance, and endurance [17, 18]. There are also many working mothers who do not receive full support from their spouses or families in terms of burden-sharing due to cultural influences. Furthermore, there is a lack of support from the workplace for them. Not many companies run workplace wellness programs specifically designed for working mothers [17, 18].

Many working mothers complain of frequent fatigues [18], headaches, back pain, circulatory disorders, poor nutritional status. They also suffer from gynaecological problems, miscarriages, premature deliveries, urinary tract infections and other diseases, sexual harassment, emotional and mental disorders. A number of health and psychological problems [18, 19] are faced by working mothers which affect their children. Babies with low birth weight or birth defects as well as adolescent children of working mothers are more delinquent [3, 18].

Some working mothers speak of how they allocated urgency to their inflexible needs, i.e., caring and work duties, rather than 'optional' health and wellness-promoting behaviours due to lack of time and energy [3, 20]. That is the reason why working mothers are in dire need of support from the worksite in the form of workplace wellness programs to help them maintain physical and psychological health. The opportunities and support provided to them to do physical activities, relieve stress, obtain flexible working time, healthy food, and health information should be based on the types of work they do and their work environment [21].

We have attempted to find previous research on the implementation of workplace wellness programs for working mothers; however, there was only little of it. Tucker et al. [22] reported on 58 nurses (30 interventions and 28 controls) who provided replicated measures of body composition and physical activity (steps) at baseline and after the intervention. In both groups, the average daily steps at baseline and after intervention exceeded 12,400. There were no significant results for physical activity, but significant results for fat index, fat mass, and percentage of fat ($p < .03$). The employer promised of targeting the wellness of working mothers [22]. Dixon [23] reported that 44 working mothers from a university in the Southwestern United States contributed to focus group inquiries concerning their physical activities, sports participation, paths they bargained for those barriers, difficulties in partaking, and suggestions for modification. The findings showed that guilt, rigid timetables, and narrow programming restricted the activity involvement with limits being varied by marital status and social class [23].

Therefore, this systematic review aims to find the workplace wellness programs that have previously been run for working mothers as well as their outcomes. There are two research questions that we aim to address: (1) What kind of workplace wellness programs have previously been run for working mothers?, and (2) What are their outputs on the working mothers?

Methods

Design

We used the 2020 Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines for this systematic review [24].

Search strategy

The data needed for this systematic review were collected from AgeLine, Embase, PubMed and Scopus databases by the Boolean operator using the keywords “occupational” OR “workplace” AND “wellness” AND “programs” AND “working” AND “mothers”. The original articles from these databases are in English. They were published between 2017–2021. The search date was 12 January 2022. The search strategy structure used was based on the PICOS-style approach. The populations of the research were working mothers under 65 years old. The intervention programs used were any workplace wellness programs consisting of screening activities to recognize health risks (e.g., monitoring of body weight, biometric measures); preventive interventions to address manifest health risks (e.g., smoking cessation, weight control counselling, physical activities, vaccination, access to fitness facilities, stress management, supportive social and physical environments, wearing personal protective equipment); health promotion to improve healthy lifestyle (e.g., healthy diet options, health education, company policies, workplace bullying); disease management (e.g., on-site medical clinics and health insurance for workers with or without their families) [2–4, 16, 17]. The outcomes of the research were the conditions of the working mothers in terms of the mental health, physical health, job satisfaction, work-life balance, depression, stress levels, burnout, alcohol consumption, smoking, overweight, and bullying [1–4, 16, 17].

Eligibility criteria

We selected only the original full-text articles in English with any kind of study design and with working mothers doing any kind of occupation (but not as single parents). The workplace wellness programs carried out at least one screening activity to identify health risks (e.g., monitoring body weight, biometric measures) **or** preventive interventions to reduce health risks (e.g., physical activity, weight control counselling, vaccination, smoking cessation, access to fitness facilities, stress management, supportive social and physical environments, wearing personal protective equipment) **or** health promotion to improve healthy lifestyle (e.g., healthy diet options, health education, company policies, workplace bullying) **or** disease control (e.g., health insurance and on-site medical clinics for workers with or without their families), but not any breastfeeding or pregnancy programs. The articles were omitted if there were no working mothers among the respondents, no workplace wellness programs implemented, and no outcomes mentioned.

Study selection and data extraction

The PRISMA guidelines were used during the data collection process, as shown in Fig. 1. The current research team consisted of 7 authors (4 physicians and 3 psychologists). The concept was created by

four of the authors, namely E, DH, GW, and ST. Of 819 articles, 6 were removed due to duplication, and 723 were excluded after the titles and abstracts were reviewed by E, M, R and F independently. Of 90 full-text articles, 48 articles were excluded after finding out that no working mothers were involved as the research respondents; no workplace wellness programs were implemented; no original articles were found out. Of the remaining 42 articles, 38 were excluded by E, M, R and F independently because there were neither specific working mothers mentioned in the respondent section nor specific workplace wellness programs implemented. The seventh author (DH) was consulted when there were disagreements among the rest of the authors. The methodology review was carried out by E, DH, GW, and ST. Finally, there were 4 articles included in the review with 3 of them being published in 2017 while the other one was published in 2020.

Data synthesis

Based on the final search output, there were only 4 articles considered eligible for this systematic the review, consisting of 1 qualitative study and 3 quantitative studies. Clarke [25] contends, “systematic review does not need to combine the results of the studies to provide an average estimate” when such heterogeneity in methodology exists. Therefore, in this study, the data were collected and synthesized through narrative interpretation. Approaches to the results were organized based on the study designs, occupations, workplace wellness programs, and outcomes. The results were presented in Table 1. Every implemented workplace wellness program had an outcome, and the survey study showed the report from their workplace.

Table 1
Description of the study findings

Study design	Occupation	Workplace wellness programs	Outcomes
Qualitative Christiansen K (2017)	Female primary caregivers, schools, tribal employees from tribal agencies, enterprises (such as the casino and gas station)	Indoor walking clubs, worksite pedometer challenges, recipe contests, and social support (exercise or eat healthier together, extra break time given during the workday for workers to exercise or choose a continuing education class), incentives to engage in healthier behaviours	Work-life balance Work-family balance Healthy behaviours (regular eating, activity schedule, physical activity, healthy diet) Positive responses to the respondents
RCT Luthar SS (2017)	PhD clinicians, physicians, physician assistants, nurse practitioners	Authentic Connections Groups (ACG) based on the structured Relational Psychotherapy Mothers' Groups (RPMG) with 12 sessions (stress management)	Mental health (less depression, less stress, lower stress hormone)
Questionnaire survey Maraolo AE (2017)	Physicians	Working hour flexibility, stimulating work environment, activities during free time, maternity leaves	Work-life balance (maternity leave) > 50% Healthy behaviours < 50% (physical activity) Mental health < 50% (stress management)
Cross-sectional Apple R (2020)	Physicians; house staff physicians; clinical providers; non-clinical support or administration non-clinical faculty	Institution-affiliated childcare (supportive social and physical environments)	Mental health (less stress and burnout)

Risk of bias assessment

Quality assessment of the selected studies was appraised with the 'QualSyst created by Kmet and teammates using a checklist consisting of 14 questions to assess the quantitative studies and 10 questions to examine the qualitative study [26]. They set up a cut-off of 75% for quantitative papers and 55% for qualitative papers. The total details of quality reviews of personal studies were provided in Supplement 2. Based this quality assessment by Kmet and teammates, quality interpretation for quantitative papers is considered "strong" if the summary score is > 0.80 , "good" if the summary score is $0.71-0.79$, "adequate" if the summary score is $0.50-0.70$, and "limited" if the summary score is < 0.50 . For qualitative papers, a score of ≥ 0.55 is categorized as "adequate" while a score of ≤ 0.54 is considered as "low-quality" [26]. Each study quality assessment is shown in Supplement 2.

Results

The 4 articles consisted of one qualitative, one RCT, one questionnaire survey, and one cross-sectional study. Three of them were conducted in the USA, while the other was in the UK. Three of them had physicians as their respondents, while the rest did not [27–30].

Workplace wellness programs

Workplace wellness programs mentioned in the four studies consisted of indoor walking clubs, worksite pedometer challenges, recipe contests, social support (exercising or eating healthy food together), extra free time provided during the workday for workers to exercise or choose a continuing education class, working hour flexibility, work environment stimulation, activities during free time, maternity leaves, institution-affiliated child-care and Authentic Connections Groups (ACG) programs with 12 sessions (1. Introduction, 2. Minimizing rumination, 3. Children's pain and go-to committees, 4. Obstacles for connecting authenticity, 5. Anger/hurt, 6. Support wallets, 7. Assertiveness and mentorship at work, 8. "Good enough" mothering, 9. Continuity after termination 10. Shame versus self-compassion, 11. Limit-setting and affection, 12. Prioritize tending) [27–30]. There are actually many other workplace wellness programs in the worksite that can be run here by adjusting to the needs and abilities of employees; however, they were not designed for working mothers (e.g., on site-clinic, health insurance, health screening, etc).

Some research revealed that workplace wellness programs held at worksite helped working mothers manage their time well. Research by Maraolo and Christiansen [27, 29], for example, showed that physical activity can be done properly if adequate places, facilities, time, and support from supervisors as well as co-workers are available. Maraolo [29] mentioned activities during free time, maternity leave, working hour flexibility as part of stress management. Similarly, the study by Luthar using the ACG intervention [28] and by Apple using institution-affiliated childcare [30] improved working mothers' time management which led to less stress. Christiansen [27] discovered that workplace wellness programs giving some extra free time to working mothers allow them to do other activities, such as eating healthy food and doing physical activities at the worksite and on workdays. These programs should also be

supported by the co-workers and supervisors. However, these do not suit the shift workers because they have a different work schedule compared to the schedule of working mothers.

Workplace wellness programs must be of great quality, comprehensive, easy to apply, engaging, fun, personalized, and designed well with some main programs [6].

Working mothers wellness, work-life balance, and job satisfaction

The respondents' occupations in the four studies were physicians, workers in tribal agencies, schools, and enterprises, PhD clinicians, physician assistants, nurses, house staff physicians, other clinical providers, non-clinical support, and non-clinical faculty administrators [27–30]. Three of the four articles mentioned mental health studies [28, 30] because the most common issues faced by working mothers are stress, burnout, and depression. The amount of work they have both at work and home is often overwhelming, which reduces their physical capacity, time, endurance, energy, and psychological acceptance [17, 18, 28, 30].

These four studies were proof that the implementation of workplace wellness programs can improve the working mothers' health by allowing them to do a healthy diet and physical activity to lower the risks of chronic diseases, such as hypertension, cardiovascular problems, diabetes, and stroke [6]. Christiansen [27] reported that there were positive impacts of physical activities and a healthy diet carried out at worksites and during workdays, such improved work-life balance, work-family balance, and healthy behaviours. Luthar [28] provided evidence that the implementation of stress management, such as ACG program intervention can improve working mothers' mental health. This result is similar to that of the Apple [30] study that implemented institution-affiliated childcare. Significant improvements were found between the intervention and mothers in the control group based on the results of central psychometric measures, with the transition mainly manifesting three months after the program had ended.

Psychological indices were measured using Brief Symptom Inventory [31], the Beck Depression Inventory [32], The Self-Compassion Scale [33], Parenting Stress Index [34], while the burnout was measured using The Maslach Burnout Inventory [35].

Other evidence showed a significant reduction of cortisol level from baseline [28]. Apple study reported a 6.3 lower median stress score for the worksite with implemented institution-affiliated childcare compared to without institution-affiliated childcare [30]. Maraolo reported more than 50% of working mothers who enjoyed the maternal leave had that impact on their work-life balance [29].

Discussion

There were not much data found on workplace wellness programs specifically designed for working mothers from 2017 and 2021. This suggests that many worksites may not have specifically designed or fully prepared workplace wellness programs yet for working mothers. Three of the studies focused on health workers like physicians. All workplace wellness programs in the four studies also showed positive

impacts of the programs on reducing obesity, depression, burnout, and stress related to childcare, finances, and other individual health [27–30]. The studies' results were in accordance with the result of Ryan et al., in which social support can promote healthy lifestyle choices, safety, health, wellbeing [36, 37], work and family satisfaction, mental health, cardiovascular health [38], job satisfaction [39] and economic outcome [40]. A large U.S. warehouse retail company running a worksite wellness program gained significantly greater rates among the exposed employees. They reported that there were some positive health behaviours developed among the exposed employees compared with those who were not exposed. However, there were no significant differences after 18 months of clinical or biometric measures, healthcare utilization and spending, and employment outcomes [40].

All the workplace wellness programs implemented in the four studies were similar to those recommended by the National Institute for Occupational Safety and Health [37] and The National Workplace Wellness Programs (WWP) in Botswana, which mainly consisted of stress management and team building, psychological and spiritual care, health screening, health promotion, therapeutic recreation, occupational health and safety [41], and multicomponent or multidimensional workplace wellness program. They were also similar to the programs presented by many U.S. employers, such as nutrition, stress reduction, issues typically addressed by registered dietitians at the therapy worksites, and physical activity [40]. Workplace wellness programs were described comprehensively in a study by Biswas et al., in which they consisted of flexible work hours, onsite shower facilities, worker assistance programs, fitness programs and/or physical activity, stress management and prevention, self-care books/tools, nutrition education, education on work-family balance, fitness breaks, on-site fitness or walking trails, health risk assessment, smoking cessation classes/counselling, weight management classes/counselling, screenings for high blood pressure, alcohol or drug abuse support programs, cholesterol reduction education, screenings for cholesterol levels, screening for diabetes, chronic disease management programs, promotions/discounts to encourage healthy food choices, food labels with specific health information in the cafeteria, nurse advice line, screenings for any forms of cancer, signages to encourage people to use the stairs, and education on HIV/AIDS [42].

Although some workplace wellness programs suit all types of workers, some others require special treatments to be included for certain groups, such a group of working mothers. The treatments include working flexibility that can be used by the working mothers for breastfeeding, the availability of childcare access, and social support from supervisors and co-workers to ease a large amount of burden they have [27–30, 36]. A successful workplace wellness program is typically one that suits a particular worker population, workers' needs, the workplace, individual and organizational health targets [3].

There is no doubt that workplace health programs starting to be widely recognized by employers for the great benefits that they offer for workers, employers, and companies, such as improved physical health, mental health, life balance work safety, job satisfaction, work productivity and economic outcomes [1, 36–40]. These benefits will certainly bring a positive impact on the workers' families as well.

Strengths and limitations

The study's strength is that it is based on a search that is entirely focused on the wellness of working women in the workplace and excludes breastfeeding initiatives.

As a limitation, we searched databases by the Boolean operator only using the keywords “occupational” OR “workplace” AND “wellness” AND “programs” AND “working” AND “mothers”. There may be some other words that can show more detailed results based on the set criteria.

Conclusion

The implementation of workplace wellness programs for working mothers showed positive effects on health problems and health costs. The results of these 4 studies showed that workplace wellness programs for working mothers can lead to time efficiency. They were held in or near the worksite, made available in the work environment, and implemented during workdays. These suit the conditions of working mothers well because they tend to have limited time and energy to balance household, family and work tasks.

Abbreviations

U.S: United State; HDL: High Density Lipoproteins; LDL: Low Density Lipoproteins; BMI: Body Mass Index; SAS: The Statistical Analysis System; PRISMA: Preferred Reporting Items for Systematic Reviews and Meta Analyses; RCT: Randomized Clinical Trial; ACG: Authentic Connections Groups; RPMG: Relational Psychotherapy Mothers' Groups; USA: United State of America; UK; United Kingdom; PhD: Doctor of Philosophy; WWP: Workplace Wellness Programs; HIV/AIDS: Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome

Declarations

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Authors' contributions

Conceptualization: E, DH, GW, ST. Data curation: E, M, R, F. Formal analysis: E, M, F. Methodology: E, M, F. Project administration: E. Visualization: E, M. Writing-original draft: E, ST. Writing-review & editing: E, DH, GW, ST.

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Competing interests

There is no conflict of interest among the authors associated with the materials used in this paper.

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Figures

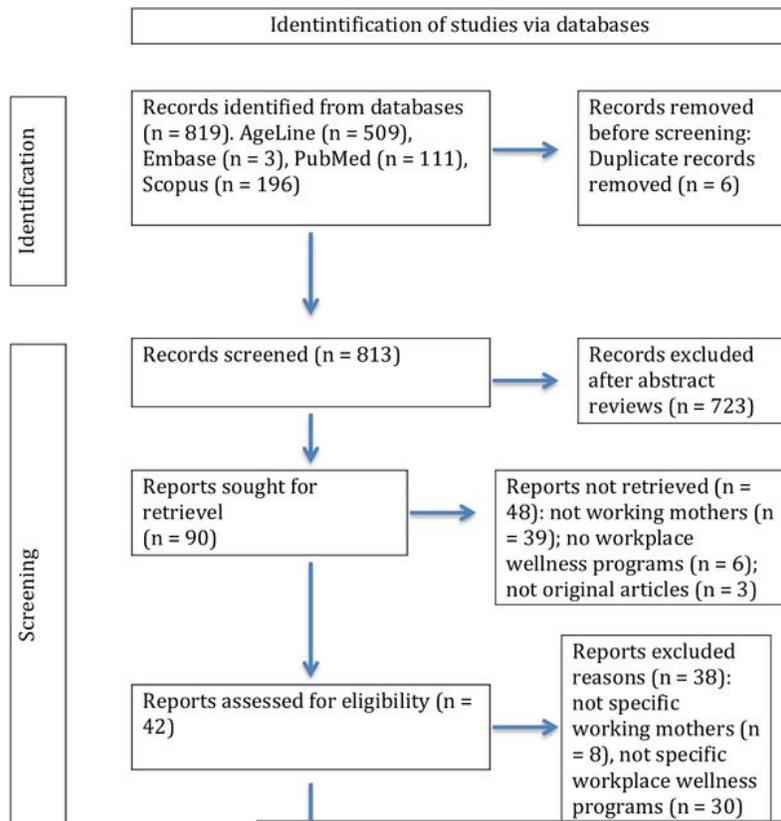


Figure 1

Article selection using PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) flow diagram 2020

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